TEACHER EDUCATION

Reflections Towards Policy Formulation

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NCTE

National Council for Teacher Education
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Preface

The National Council for Teacher Education (NCTE), a statutory body of the Union Government, established under an Act of Parliament, has a mandate for improving the quality of teacher education programmes on a continuing basis.

There is a widespread perception among the fraternity of teacher educators in the country that teacher education entered the era of mediocrity some thirty years back and has not been able to redeem the situation in spite of sporadic efforts made both by governmental and non-governmental agencies from time to time. Proliferation of small size teacher education institutions, non-availability of the required infrastructural and instructional facilities in a majority of them, non-availability of properly qualified teacher educators in adequate number, lack of professionalism in the organization of various teacher education programmes, neglect of certain curriculum areas in relation to teacher preparation and absence of quality assurance measures are often identified as some of the reasons responsible for the down slide.

In order to organize a well-informed discourse on various quality parameters in teacher education, the NCTE decided to invite experienced teacher educators and experts in the allied fields to contribute position papers in their areas of expertise. Twenty-two teacher educators and experts responded to the NCTE's invitation whose contributions are included in the present volume.

We are grateful to them for their inputs and appreciate their concern for quality improvement in teacher education. We must also put on record our thanks to Dr. D.N. Khosla for going through the manuscript and its copy editing.

The introductory chapter, besides presenting the 'overview' of different papers, also raises some issues and questions which need to

be addressed in order to make the preparation of prospective teachers a 'professional' endeavour.

The discourse concerning the quality improvement of a system has to be a continuing activity as there can be no finality in such an endeavour. The NCTE shall welcome the views of the readers of this volume regarding the issues and questions raised in this volume. Their considered views will help the NCTE to plan and execute appropriate interventions to address the quality concerns in teacher education.

– Editors

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Chapter 1

Introduction

1. Teacher Education : The Existing Scenario

The system of teacher education in India is presently in a state of turmoil. The past few years have witnessed unprecedented expansion in almost all sectors of teacher education, specially in respect of elementary and secondary teacher education programmes. There is nothing inherently wrong in the expansion of the system provided it is systematic and based on the needs of the expanding school system. Thus, mere growth of teacher education *per se* cannot be a matter of concern, but it does cause concern if it leads to the dilution in quality or standards. It is also true that the expansion, if it had occurred in the government sector alone, could not have possibly led to the dilution of standards. There is a perception that the deterioration in standards is due to the uncontrolled expansion of the system in the private (self-financing) sector, without proper assurance of maintaining quality in teacher education by not providing the required infrastructural and instructional facilities or by not recruiting the required number of properly qualified staff.

The entry of private sector in the system of teacher education has not taken place independent of other sectors of education or of other sub-systems of the society. In fact, it is the offshoot of the policy of 'liberalization' pursued by the country since early nineties. The inability of the state governments to set up new teacher education institutions or to provide grant-in-aid to the new private institutions gave impetus to the establishment of self-financing institutions. The expansion of the teacher education system, no doubt, was needed to meet the increasing human resource requirements of the expanding school system but unfortunately, the state apparently abdicated its responsibility for teacher preparation and left the field open for the private sector.

The dissatisfaction with the system of teacher education and its quality is not a new phenomenon. In fact, this has been articulated time and again during the past six decades. The Education Commission (1964-66) made a detailed critique of the teacher education system as it existed in the early 1960s. Realizing that the teacher education programmes were,

by and large, divorced from the realities of schools, it recommended reorientation of teacher education curricula so as to contextualize it in tune with the Indian conditions. It also emphasized the need for locating teacher education in the mainstream academic life of the universities and raising its status and prestige to the level of other disciplines. Later, the National Commission on Teachers – I (1983-85) also recommended widespread reforms, particularly in the duration and content of training. It emphasized the need for longer duration teacher preparation programmes by integrating the education of content and pedagogy in a single programme. Regarding the teaching practice or internship programmes, the concern has often been expressed not only about its inadequacy but also about its organization in a routinised and ritualistic manner. It has also been pointed out that the teacher education programmes are more theory oriented and less practice oriented. The theory courses are taught in a manner which instead of stimulating critical and reflective thinking, encourages memorization and reproduction without understanding. The student teachers are seldom encouraged to develop their own concepts and ideas about children's education and teaching on the basis of personal observations and experiences.

The system of teacher education has lived with the above mentioned weaknesses since long. In spite of many attempts made from time to time for restructuring and strengthening of teacher education, the situation has remained nearly the same. There are a host of issues which have remained unresolved. The unprecedented expansion in the private sector, and that too, in an unplanned manner, has given birth to new issues. However, before examining the issues at length, it would be worthwhile to examine the assumptions or theoretical rationale of the existing teacher education programmes.

2. Assumptions Underlying the Existing Teacher Education Programmes

2.1 Higher secondary pass as academic qualification is sufficient for teaching lower stages of school education, that is, Early Childhood Education (ECE), primary and upper primary, while Bachelor's and Master's degrees are essential for teaching at the secondary and higher secondary stages of school education respectively.

2.2 Higher secondary pass as academic qualification is sufficient to prepare teachers for teaching all subjects upto Class V and 2 or 3 subjects at the upper primary stage, that is, Classes VI-VIII.

2.3 The purpose of teacher preparation for the primary stage is to prepare teachers for this stage and not for specific subjects as 'class system' of teaching is followed in a majority of primary schools.

2.4 The students who join the primary/elementary teacher education programme are competent to teach even those subjects upto Class V which they have studied upto Class X only. The students who join

primary teacher education programme shall have studied either Science or Humanities or Commerce stream at the senior secondary stage. This implies that the students, who have not studied science or mathematics or social sciences upto Class XII, shall have to prepare themselves for teaching these subjects upto Class V.

2.5 Secondary school teachers must be prepared to teach at least two subjects of secondary school curriculum (Classes IX and X) even if they have not studied both the subjects at the graduation level.

2.6 The secondary teacher education programme (B.Ed.) is appropriate for the preparation of senior secondary teachers as well. The students acquiring Master's degree after completing their B.Ed. course become automatically eligible for teaching the senior secondary classes without undertaking additional inputs specifically suited to the requirements of teaching at the senior secondary stage.

2.7 Stage specificity is essentially required for the preparation of teachers for different stages of school education. A teacher prepared for primary/elementary stage of education shall not be competent to teach at the secondary stage even after acquiring the Bachelor's degree and a teacher holding secondary teacher education qualification is not eligible for teaching at the primary stage even if he/she possesses higher academic qualifications.

2.8 A social science teacher at the secondary stage shall be able to teach all components of social science curriculum even if he/she had studied only one or two social sciences at the graduation level. Likewise, a science teacher shall have the competence to teach the entire science curriculum even if he/she had not studied its one or two components at the graduation level.

2.9 While specific teacher education programmes are required for the preparation of physical education teachers, no such programmes are needed for the preparation of Arts or Music or Dance teachers. The Artists/Musicians/Dancers are quite suitable and competent for the teaching job even if they have not undertaken any formal course in pedagogy. This also holds true in the case of vocational teachers.

2.10 Teacher preparation can be both stage-specific and subject-specific. In addition to the mainstream programmes meant for preparing stage specific teachers for the ECE, primary and secondary stages, there are specialized programmes for the preparation of teachers in subjects like English, Modern Indian Languages (MILs), classical languages, physical education, etc.

2.11 Special programmes for the preparation of School Heads are not necessary. A trained teacher after putting in a specified number of years in the teaching profession automatically becomes eligible for the position of School Head.

2.12 A person holding the B.Ed. degree is competent for holding administrative positions in the education department on the one hand and teaching in ECE and Elementary Teacher Education (ETE)

institutions for preparing teachers for the school stages on the other, for which they themselves were never prepared.

2.13 Initial teacher preparation programmes can be conducted through face-to-face as well as Open Distance Learning (ODL) mode with equal rigour and level of professionalism. However, the students enrolled in ODL programmes are required to possess some teaching experience in addition to the eligibility qualifications prescribed for the concerned face-to-face programme.

2.14 The prospective teachers may pursue the content and pedagogy courses sequentially in mutually exclusive settings. After completing their general academic education in secondary schools or Arts and Science Colleges, they may come to Teacher Education Institutions (TEIs) for undertaking courses in pedagogy.

2.15 The concurrent pursuit of the content and pedagogy in an integrated manner, though desirable, is a model which cannot be implemented as a mainstream programme.

The assumptions mentioned above had been accepted as the guiding principles for the designing of teacher education programmes at different points in the history of teacher education, but in the light of new developments in different aspects of school education, namely goals and objectives of education, school curriculum, school management, teaching methodology and evaluation practices, the assumptions need revalidation and, if necessary, modification, for which these have to be critically examined. Thus, the assumptions mentioned above are, in fact, the issues for discussion and debate.

In addition to the issues relating to the structure and nature of teacher education programmes discussed above, there are also issues relating to other aspects of teacher education, namely, duration of teacher education programmes, teacher education curriculum, transaction of curriculum in TEIs, teaching practice, internship and quality assurance in teacher education, use of Information and Communication Technology (ICT) in teacher education, teacher preparation for inclusive education, professionalisation of teacher education, in-service education of teachers, preparation of teacher educators and research in teacher education.

3. Emergent Issues of Teacher Education

The following issues arising out of the assumptions and issues relating to other aspects of teacher education mentioned above need to be resolved in order to restructure teacher education to meet the future needs of the education system. Any policy intervention in this regard ought to provide unambiguous answers to these issues.

3.1 Duration of Initial Teacher Education

The issue relating to the duration of initial teacher education has

been a subject of intense discussion during the past few years. In the case of primary teacher education programme, the consensus has been achieved regarding its duration (two years) and regarding the eligibility qualification for joining the programme, that is, Class XII pass. However, regarding the duration of the B.Ed. programme, conflicting views have been articulated by the educationists and teacher educators. On the one hand, there is a view that one year duration of the B.Ed. programme is inadequate as almost four to five months are lost in admissions and examinations. On the other hand, there is a view that instead of putting extra burden on the resources of the state and those of the students, efforts should be made to enhance the internal efficiency of the system. Moreover, the quantum of tasks to be accomplished and the competencies to be developed during the initial training of teachers alone should be the criterion to determine the duration of the programme.

3.2 Academic Qualifications of Teachers

The issue concerning the minimum academic qualifications of an ECE teacher or an elementary school teacher is presently a matter of discussion among people associated with school education. There is a view that the assumption that teachers at the lower stages of education require lower academic qualifications is no longer valid. It is often reported that teachers with senior secondary academic qualification find it difficult to negotiate the curriculum of upper primary classes with confidence. Besides, there appears to be enough merit in the argument that the academic and professional credentials of the ECE and primary teachers should be at par with those of upper primary or secondary school teachers. This implies that the minimum eligibility qualification to join the ECE or ETE programmes should be the Bachelor's degree in place of senior secondary pass. Does it mean that diploma level teacher education programmes with senior secondary as the eligibility qualification should be phased out?

3.3 Stage-specific Teacher Preparation

The present day teacher preparation programmes, though named as elementary and secondary teacher education programmes, do not synchronize with the elementary and secondary stages of school education. The diploma level programme, though meant for preparing teachers for the entire elementary stage, is perceived to be a programme for primary stage alone and the secondary teacher education programme is not restricted to the secondary stage alone (Classes IX-XII) as it also prepares teachers for upper primary stage, which is part of the elementary stage. In fact, this programme is not adequately geared towards the preparation of teachers for the senior secondary stage, which is a part of the secondary stage of school education. The situation described above leads to the following questions:

Is it professionally necessary to have stage-specific teacher preparation programmes?

Do different stages of school education have differential requirements in terms of teachers' competencies?

Does the knowledge base of elementary teacher education differ significantly from that of secondary teacher education?

Is it possible to conceive a comprehensive programme of teacher preparation, which is generic in nature and aims at preparing teachers for the entire school stage?

In case, the consensus emerges in the country around the idea of stage-specificity, then what should be the academic qualifications of ECE or elementary or secondary stage teachers? It appears obvious that ECE and elementary teachers should possess a Bachelor's degree while secondary teachers should have a Master's degree in a relevant discipline. More specifically, there could be three degree level teacher preparation programmes, namely, B.Ed. (ECE), B.Ed. (Elementary) and B.Ed. (Secondary). But some people may have a different viewpoint in this regard.

3.4 Entire Teacher Education within University Jurisdiction

At present, the secondary teacher education system is governed and regulated by the university system, while the ECE and elementary teacher education programmes are governed by the state education departments or by the agencies designated by them. However, there has been a demand to treat teacher education as part of higher education and, therefore, to locate it in the university system. It is argued that this single step shall not only raise the status of teacher education but will also bring rigour in its organization. What shall be the implications of this switch over for the existing ECE or ETE programmes and for the institutions offering these programmes?

3.5 Implications of the Integrated Models of Teacher Education

At present, the prospective teachers enroll themselves in teacher education institutions after completing their general education in senior secondary schools or degree colleges, and, therefore, while in TEIs, they concentrate on the learning of pedagogy alone. However, it is agreed that concurrent learning of content and pedagogy in an integrated manner is a better model of teacher preparation. The four-year B.Sc. B.Ed. programme of the Regional Institutes of Education (RIEs) of the NCERT and Bachelor of Elementary Education (B.El.Ed.) programme of the University of Delhi are examples of the integrated model. It is also agreed that in an integrated model, it is possible to connect the content knowledge to the demands of teaching at the relevant stage whereas in the existing arrangement, the academic qualification acquired by the student teachers in institutions of general education is not specifically designed to meet the demands of teaching. The desirability of the integrated model may not be

questioned but is it appropriate and feasible to accept it as the only model of teacher preparation? An institution offering the integrated programme will have to be an amalgamation of a full-fledged Science and Arts College and a College of Education. It is primarily because of the costs involved in the setting and running of such an institution, that the RIE model could not be replicated during the past four decades. Moreover, the students who fail to make a career choice at the end of Class XII should not be debarred from joining the teaching profession after they complete the Bachelor's programme in science, social sciences or humanities in an institution of general education. Should the one-year B.Ed. programme be allowed alongwith the integrated programme or should it be discontinued?

3.6 Self-Financing Teacher Education

The unplanned expansion of teacher education in the private sector (self-financing sector) during the past ten years has led to commercialization on the one hand and deterioration in the standards of teacher education on the other. The fact that new institutions are coming up in the private sector alone is a proof that the state governments are not interested to accept additional responsibility for the preparation of teachers. However, more and more self-financing institutions are likely to come forward in future too to set up new TEIs. Knowing well that the primary motive of small self-financing institutions is to maximize profits, should more such institutions be allowed or should it be made obligatory for the state governments to make substantial contribution in the establishment as well as in the running of the institutions? Needless to say that the state shall be willing to invest in an institution if its establishment is considered essential and then it shall be obliged to participate in its day-to-day management also.

3.7 Guidelines for Expansion of Teacher Education

Besides enlisting active participation of state governments in the running of teacher education system, what other guidelines should be formulated for further expansion of the system? Should human resource planning based on the objective assessment of the supply and demand situation be one of the bases for the establishment of new institutions? What should be the smallest unit for human resource planning–district or state? Should future expansion be restricted to the un-served areas or neglected curricular areas or innovative programmes?

3.8 Teacher Education of Specific Subject Streams

Besides the mainstream elementary and secondary teacher education programmes, some subject-specific teacher preparation programmes are also offered in some parts of the country. The programmes

meant for the preparation of physical education teachers and language teachers are also in existence. In some states, specific programmes for the preparation of Arts teachers are also in existence while in other states teachers possessing formal qualifications in Music and Arts are appointed without any professional qualification in education. However, there is a view that an Artist or a Musician may not prove to be an effective teacher because teaching and practising an Art require different sets of competencies, skills and attitudes. Is Bachelor's or Master's degree in Arts/Music a sufficient qualification for an Arts or Music teacher? Likewise, is B.Sc. or M.Sc. in computer science an adequate qualification for a computer teacher? If not, what types of programmes should be designed for the preparation of Arts teachers, Music and Dance teachers, vocational teachers and computer teachers?

3.9 Practitioner's Enquiry and Reflective Teacher Education

The need for ensuring appropriate linkages between teacher education curriculum and school curriculum is well recognized and, therefore, does not require further elaboration. On the one hand, teacher education curriculum needs to be periodically renewed to meet the demands of changing school curriculum, and on the other, it has to influence the school curriculum on the strength of researches and systematic experimentation. The National Curriculum Framework (NCF) brought out by the NCERT in 2005 has significant implications for all aspects of teacher education, including its curriculum. Its vision about the child as a generator of knowledge and about the teacher as a facilitator of learning and reflective practitioner necessitates far reaching changes not only in the content of teacher education but also in its organization. What new inputs need to be incorporated in the teacher education curriculum? How should teacher education curricula be transacted to prepare reflective teachers?

3.10 Preparation of Teacher Educators

The quality of teacher education cannot rise above the level of the persons who are entrusted with the responsibility to run the system, that is, the teacher educators. It is presumed that any person possessing a Master's degree in education is good enough to become a teacher educator in secondary teacher education institutions. In the case of ECE and ETE institutions, a person possessing B.Ed. degree, that is, the qualification meant for preparing secondary school teachers, is considered eligible for preparing elementary school teachers. In what ways the existing M.Ed. programme should be modified so as to make it an appropriate programme for the preparation of teacher educators for different teacher education programmes? What alternative programmes could be designed to prepare teacher educators for different programmes?

3.11 Professionalisation of Teacher Education

It is often pointed out that the present day teacher education programmes lack professionalism in their content as well as in their organization. Very often, it is suggested that it is imperative to enhance the duration of a programme to make it a truly professional programme. There is another viewpoint that only teacher educators who are professional in their outlook and approach can introduce 'professionalism' in the organization of teacher education. Internship or practice teaching of a longer duration in real school situations is also considered essential for making teacher preparation a truly professional endeavour. The content and delivery of a 'professional' programme are continuously updated, enriched and linked to the local realities on the basis of systemic research and experimentation. In order to devise appropriate strategies for the professionalisation of teacher education, the following questions need to be answered:

- Is it absolutely essential to enhance the duration of a programme to make it a professional programme?
- Is it essential to enhance the duration of 'internship' to make teacher education 'professional'?
- Shall the school be willing to pay 'honorarium' or stipend to the students for the period of internship?
- What programmes should be devised for the preparation of teacher educators?
- What could be done to ensure updating and enrichment of the content and methodology of teacher education on a continuing basis?

3.12 Quality Assurance in Teacher Education

Quality assurance in teacher education is necessary to prepare teachers who are 'professionals', whose work as teachers is characterized by high degree of professionalism. To achieve this, it is necessary that only those students are accepted who demonstrate high degree of aptitude and potential for the teaching profession. Besides, it needs to be ensured that the process of teacher education in TEIs is continuously monitored and evaluated for which credible systems of institutional appraisal shall have to be put in place. In the context of quality assurance in teacher education, the following questions need to be addressed:

- What mechanisms should be devised to determine the fitness of new entrants to the profession?
- Should these mechanisms be applied at the institutional level, state level or national level?
- What agency is best suited to design and implement the institutional appraisal system? Should it be a state level affiliating body or a national level regulatory body?

- What should be the components or dimensions of institutional appraisal?
- What mechanisms should be devised to determine the eligibility of persons desirous of entering teacher education as teacher educators?

3.13 ODL and Teacher Education

Distance education is now widely recognized as an alternative education system of comparable quality in respect of both liberal and professional education. However, in the case of practice-oriented professional courses, there are reservations about its effectiveness in certain quarters. In the case of teacher education, there is a view that the major purpose of ODL should be to clear the backlog of untrained teachers. On the other hand, there is a view that ODL, being an alternative mode, should be available to anyone who is not in a position to pursue teacher education through face-to-face mode. However, there has also been a view that the teachers must acquire first qualification in teaching through the conventional face-to-face mode, and then should have the option to acquire a second qualification through ODL. In the case of continuing education of teachers through ODL, its utility, efficacy and cost-effectiveness is unquestionable. Regarding teacher education, the following questions need to be addressed:

- What should be the purpose of teacher education through ODL?
- Should it be made available to only those teachers who intend to pursue second qualification in teacher education in order to improve their career prospects?
- Should it be restricted to only those programmes which are generally not available through face-to-face mode such as B.Ed. (Senior Secondary), B.Ed. (Music/Dance/Arts/Computer Education)?
- What types of continuing education programmes could be offered through ODL mode?

3.14 Professional Development of Teachers

The complementarity between initial preparation of teachers and their continuing education is accepted by one and all. During the past two decades, some sort of training network in the form of District Institutes of Education and Training (DIETs), Colleges of Teacher Education (CTEs) and Institutes of Advanced Studies in Education (IASEs) has come up in the country. However, in the absence of a clear-cut policy regarding professional development of teachers, and because of the absence of adequate provisions in the annual budgets of the state governments, the network has not become fully functional. Though the state governments recognize the importance of teachers' In-service Education and Training (INSET) as a valuable input for improving the quality of school education,

they are obliged to accord it a low priority on account of numerous constraints and whatever little is done in the name of in-service education is done as a ritual. It lacks professionalism and is, by and large, characterized by ad hoc-ism. In the context of teachers' in-service education, the following questions need to be addressed:

- How can the training network be strengthened and made functional?
- What should be the broad components of the in-service education policy of a state government?
- What percentage of the education budget be allocated for the in-service education of teachers?
- What should be the role and contribution of the central government in the continuing education of teachers?
- In what ways the potential of ODL could be exploited for the institutionalization and professionalisation of teachers' in-service education?

4. Overview of the Position Papers

Realising the need for initiating appropriate policy interventions and turn around strategies to bring back discipline in the teacher education system, the NCTE thought it prudent to address the questions mentioned in the preceding sections of the present chapter and strive to build consensus regarding the possible solutions. As a first step towards the consensus building exercise, the NCTE commissioned 'Position Papers' on almost every relevant aspect of teacher education. While the ideas contained in the 'Papers' and found acceptable have been incorporated appropriately in the policy formulations, the selected papers have been included in the present volume. We hope the teacher educators and students of education shall find the volume as a useful reference material on teacher education.

An overview of the position papers is outlined below:

A.K. Sharma has attempted to pass the milestones of the journey of deliberations of the various Commissions on education in general and teacher education in particular. His paper provides a backdrop to the whole philosophy of teacher education, deals in detail with the discourses on the duration of initial teacher preparation and has alluded to the philosophy of teacher education to be imparted in residential institutions. It reiterates a very important concern of breaking the isolation of teacher education and to bring it under the umbrella of the university system including undertaking education as a discipline of university study. The quality of intake and the content and process of teacher education on which the entire quality of education depends is also discussed. The issue related to organization of school practice/internship in teaching has been a significant focus of all Education Commissions and this has been appropriately analysed. Training in activities integral to education and

concerns of inclusive education have also engaged the attention of the Education Commissions. Although dated in time, the paper endorses the hope of various Education Commissions that teacher education institutions will become centres of dynamic educational reconstruction.

Saroj Pandey reiterates in her paper that India has been struggling hard ever since its independence to indigenize and modernize teacher education curriculum so as to prepare teachers who are well-equipped to meet the present day and future needs of the society in general and of the education system in particular. The teacher education curriculum has been revised in 1978, 1988 and 1998 to reflect and incorporate the cultural, linguistic and geographical diversities of the country and keep pace with the changing knowledge structure in the world as a result of socio-political, economic upheavals, and technological and communication advancements.

However, the teacher education programmes in India have remained procrustean in practice with little scope for the inclusion of cultural and social diversities of the country. The field experiences of existing teacher education programmes of the country reveal that in spite of widespread efforts to modify teacher education curriculum, only cosmetic changes have taken place in reality and majority of teacher education programmes remained satisfied by providing a 'chef's salad' of information about various concepts to prospective teachers. Yet we are still grappling in the dark to clarify the notion of culture-specific pedagogy and the method of its integration in teacher education programmes.

While Teacher Education Curriculum Framework of 1978 advocated inclusion of 'Community Work' in the Curriculum, the 1998 Framework emphasized the use of culture-specific pedagogies. The NCF (2005) has visualized a major epistemological shift in the nature of knowledge and learner from behaviourist to constructivist perspective that calls for subsequent reforms in teacher education curricula in order to prepare teachers to play the role of facilitators of learning utilizing the experiences of learners as no reforms could succeed unless teachers are equipped with relevant content knowledge and pedagogical skills to carry those reforms inside the classrooms.

Alka Behari and **Shyam Menon** examined the vision of education presented in the NCF (2005) and made an attempt to delineate its implications for the teacher education system in general and teacher education curriculum in particular. Locating the discussion within the purview of development of structures and their functioning, the authors have undertaken a journey into analysing the re-conceptualised role of the teacher and, thereby, the implications this role has for teacher education. The entire journey has resulted in the emergence of some unanswered questions regarding ongoing professional development of teachers, and the new pedagogic and curricular approach demanded. They have emphasised that in a large system, implementation strategies which take cognisance of the 'quality' dimension is a real challenge.

Creation of infrastructures and other institutional structures and mechanisms, dismantling of existing hierarchical collectives and empowerment of teachers are some of the issues within which any future policy framework would have to be conceptualised. This comes out as the crux.

In his paper, **B.K. Passi** raises questions about the meaning of innovative teacher education models and about the possible criteria for their identification. He has identified different innovative models which were just proposed and those which were launched. Such models were either full-fledged models or are the innovative components of the parent models. Thus, four groups of innovative models have been identified : (1) Launched–Wholes, (2) Launched–Components, (3) Proposed–Wholes, and (4) Proposed–Components. A fifth group of innovative teacher education programmes (TEP) is in the form of open education. Within the group of Proposed-Wholes, the paper gives a set of six full-fledged models. These proposed models have been named as Preparing a New Professional, Brain Based Teacher Education, Creating a Learning Society, Dialogue Based Holistic Model, Capacity Building of Teacher Educators, and the Model of New Vision of NCERT. Finally, the author has whole-heartedly supported the new vision of NCERT. He suggests that the NCTE should work on this newly envisioned model called Teacher Education for Curriculum Renewal. The author has also supported the view that teacher education may have diverse models and an institution may opt for any one model depending upon its situation. The author believes that this model will synergize our efforts to innovate current teacher education.

M.M. Pant looks at teacher education in the context of the influence of ICT and allied technologies with a balanced approach between hype and disillusionment. He suggests training programmes both in the technology domain and the new teaching-learning domain labeled 'webagogy'. Such training modules could be delivered as small chunks named 'nano-learning' and pursued while on the job, to supplement the regular initial teacher training for entry into the profession. However, some modules in ICT and teaching must be included in the curriculum of initial teacher training also.

School educators will thus be adept in adapting and adopting new technologies, in ways that they can be as effective in traditional class-rooms that are not technology equipped (and English is not the medium of instruction), but the learners still acquire higher order lateral and critical thinking skills as well as a creative and innovative approach to construct their knowledge. The emerging web 2.0 technologies hold great promise to support this large community of teachers in ways that are unprecedented.

Finally, a suggestion is made for 'independent educators' who work professionally like doctors or lawyers without necessarily being employed by a licensed Institution.

M.N.G. Mani, while explaining the concept of inclusion, has

emphasized that inclusion is not a programme but an ideology. In education, it implies that students belonging to all sections of the society, differently abled children and physically challenged children should have the opportunities to study in the same institution in an inclusive environment. The author has discussed at length the barriers in the implementation of the concept of inclusion, such as attitudinal barriers, lack of accessibility, etc. He has also suggested modifications in curriculum content and transactional strategies to ensure inclusion. In the teacher education curriculum, he has suggested content units for inclusion in the courses on Psychology, Foundations of Education and Methods of Teaching. Besides including appropriate units in different courses, the teacher education institutions should also set up a Resource Room where basic assistive devices could be provided.

C.K. Misra discusses the concepts of work experience and vocational education and preparation of teachers for these areas in historical perspective. He has highlighted the recommendations of the National Focus Group of NCERT on Work and Education relating to preparation of teachers for the work-cultured pedagogy and for addressing the problem of cultural resistance among teachers towards this pedagogy. According to the author, integration of knowledge and skills, information technology, environmental issues, foreign languages and culture are new thrust areas in the vocational teacher preparation programme. Finally, the author has made a case for the emergence of vocational education as a distinct field of teacher education.

Bhuleshwar Mate has dwelt upon various issues relating to preparation of teachers of Art education. Like the earlier curriculum frameworks for school education, the latest one in the series, that is, the NCF (2005) has visualized Arts and Aesthetics as an integral and non-negotiable part of school curriculum from pre-primary to secondary stage of school education. Regarding teachers of visual and performing arts (Fine Arts, Music, Dance, etc.), there have been two viewpoints. One viewpoint favours the appointment of persons who possess specialized professional qualification in their area of specialisation, and in their case, it is argued that formal qualification in pedagogy need not be insisted upon. The other viewpoint supports the contention that Arts teachers, in addition to their training in their area of specialisation, should also have a formal qualification in pedagogy as it is argued that being an accomplished Artist and a successful teacher are two different callings. The author favours the second viewpoint and, therefore, has suggested a few models for the pre-service and in-service education of Arts teachers.

In their paper on preparation of Health and Physical Education technology, **Jasraj Singh** and **Swapan Mookerjee** have rightly pointed out that the professional preparation of physical education teachers in India has received scant attention. While considerable variations in teacher preparation exist because of institutional, regional and system differences, this pluralism is also emblematic of the lack or absence of national policies

or a standardized accreditation process in the credentialing of physical education teachers. A call for policy reformulation, curricular reconceptualization and programme renewal cannot ignore issues germane to society and factors driving policy decisions in the higher echelons of the government. These developments have been analyzed using the National Sports Policy as a template. The meshing of competitive sports goals with those of educational goals is not always congruent from a pedagogical perspective. This paper highlights the seriousness of health epidemics such as cardio-vascular disease, sedentariness and all the associated health consequences confronting the Indian population today. This is an attempt to broaden the dialogue to a universal notion of physical education that embraces the right of the individual to engage in lifetime sport and physical activity as opposed to the traditional competitive sports and games model. The paper further highlights that the field of teacher education in physical education is characterized by a near complete absence of a body of published literature or research base. The paper also presents the prevailing standards (e.g. NASPE guidelines) along with other findings from the professional preparation domain with the ultimate intent of stimulating an ongoing discourse that will lead to the complete overhaul and development of a comprehensive model of professional preparation and credentialing of physical education teaching programmes.

Mohan Menon holds the view that ODL is not an alternative mode of education and training as both face-to-face learning and ODL fall into the same continuum of closed to open systems. The two concepts are getting merged with more and more educators who now prefer a mixed mode of instructional organization without branding courses as Face-to-Face or ODL. After surveying a wide variety of ODL teacher education programmes, he concludes that ODL modality is quite effective for initial as well as in-service education of teachers. Starting with mere correspondence courses in the 1960, ODL based teacher education has reached the stage where the use of teleconferencing, multimedia, online interactions have become integral components of the programme delivery mechanism. The increasing use of technology in the ODL based teacher education has ensured maintenance of standards in the preparation of teachers. He has further highlighted the need for developing appropriate procedures for the assessment and accreditation of ODL based teacher education through the bodies like the National Assessment and Accreditation Council (NAAC).

G.L. Arora expresses the view that since teaching is now recognized as a profession, therefore, its members, that is, teachers have to perform their functions and responsibilities as 'professionals'. Teacher education, if organized professionally, can contribute substantially towards preparation of 'professional teachers'. Teacher education, as it is presently organized in the country, has limited potential to prepare the type of teachers needed for the present day schools. Therefore, there is an urgent need to professionalize the system of teacher education for which all players

responsible for guiding, regulating, running and monitoring the system have to perform mutually reinforcing and supportive roles. The policy initiatives of the NCTE at the national level have to be concretized by the TEIs under the guidance of the affiliating bodies. The rigorous and demanding evaluation scheme prescribed by the universities is bound to make the process of curriculum transaction in TEIs equally rigorous and challenging. However, the major responsibility for professionalizing teacher education rests with the TEIs and teacher educators should use such training strategies as have the potential to make the prospective teachers reflective practitioners and creators of knowledge rather than mere recipients of information.

Teachers' in-service education, presently organized sporadically in an ad-hoc manner, needs to be institutionalized and professionalized. As a result of quite a few governmental interventions, a training network has come into being in the country, but in the absence of a well-defined and nationally accepted INSET policy, it has, by and large, remained 'project based' and has not been recognized as an integral component of the systemic reform strategy. The six step model suggested by the Chhattopadhyay Commission (1983) has immense possibilities for professionalizing teachers' in-service education.

C. Seshadri has raised many important issues relating to the preparation and competencies of teacher educators who are responsible for preparing teachers for different levels of school education. There is a severe shortage of properly qualified and professionally trained teacher educators in terms of inadequacy of required number of teacher educators to run the programmes as well as mismatch in the qualifications of teacher educators and their job requirements.

The normal expectations are that the teacher educator would: be a scholar in a chosen knowledge field, possess pedagogical competence, be ICT education savvy, possess understanding of the conceptual complexities of school curriculum and capability of demonstrating teaching behaviours that he/she expects from student teachers and be a reflective academic practitioner. The typical teacher educator does not, however, possess an academic and professional profile that matches these expectations.

What distinguishes teacher educators from teachers is their concern for identifying usable second order knowledge – theories, principles, generalizations – from first order practice and communicating it to their charges. Being a meta-activity, it deals in showing how things are done at school and classroom levels, explaining the reason, the why of things and the basic theory and principles behind classroom practices. These call for skills and understanding of a different kind in addition to the skills required for actual school teaching.

Not being an undifferentiated category, teacher education programmes for preparation of teacher educators should take note of the stage specific training needs of teachers rather than being generic that

the demands and requirements of ECE, Elementary and Secondary education and the corresponding teacher education programmes are not the same. M.Ed., as a programme for training teacher educators, is poorly focused, lacks professional rigour and offers little scope for professional development and research in key areas of school education such as curriculum enquiry and design, pedagogic studies, epistemological concerns and issues related to school and society. The innovative collaborative Post-Graduate programme of M.A. Education (Elementary) launched by the Tata Institute of Social Sciences, Mumbai holds out high promise for training specialized work force in different areas of elementary education including teacher educators and establishing education as a knowledge field in its own right.

Future directions for the development of the field include: diversification of specializations into areas of curriculum and pedagogic studies in mathematics, languages, social sciences and sciences and encouraging students to pursue Post-Graduate (PG) studies in a chosen discipline along with the option of specializing in a select curriculum and pedagogic study course; providing diverse routes to pursue studies in education like four-year integrated courses in elementary and secondary education, electives in educational studies followed by a range of PG studies in education, social sciences, sciences, humanities, mathematics, language studies, liberal arts, etc.

Marmar Mukhopadhyay points out that 'Quality' is the major agenda in Government of India's policy initiatives on all sectors of education, namely, elementary, secondary and higher education. Hence, quality has taken prominence in Indian education as a theme cutting across all levels of education. Quality higher education is dependent upon quality school education. Quality school education cannot be achieved without quality teacher education. Quality management has emerged as a scientific technique from Scientific Management propounded by Frederik Taylor in 1920s through Quality Circles, Total Quality Management (TQM) and Six Sigma. Most of the quality management science is applicable across various sectors. Deming claimed TQM, developed and tested in industry, is applicable to government, education, health and other services. The author has experimented with TQM with considerable success at all levels of education including teacher education. The paper's primary focus is on the science of quality management in education with implications of quality assurance in teacher education. The author has made several propositions aimed at improving the quality of the system of teacher education in India.

C.S. Nagaraju endorses the popular perception that the importance of teachers in comparison with other vital occupations is directly linked to the importance accorded to the role of education in its formal sense in a society. Teaching in India as an occupational category has seen historically many changes in its occupational status due to the changing nature of the roles and functions of education in society and the expectation of stake-holding entities. Stake-holding entities are those who legitimize education

or those who utilize the services of education. Some examples of the legitimizing agencies are: religion, state, guilds, etc., and utilizing entities are families, economy, state, etc. In modern societies, the education sector comes under the influence of many legitimating as well as utilizing entities simultaneously. Teaching and education related roles have become diversified and their preparation and supply assumes complex proportions. Indian society at present is undergoing rapid changes and education as a societal function is being shaped both by internal and international influences of regulatory nature as well as expectations for its instrumental nature. Hence, teaching as an occupational category comes under limelight quite often. This paper attempts to analyze the concept of occupational status and examines the basis of status accorded to professions. In the process, the professional nature of teaching is examined keeping the characteristics of the profession. Subsequently, salient features of the recommendations evolved on the basis of consensus among the members of International Labour Organization (ILO) in 1966 regarding the standards defined to accord a proper status to school teachers. The effect of magnitude of the demand for school teachers in the light of the changing future policy scenario and current demand arising from programmes on the ground and the response of the implementing agencies to meet the same have been visited from the perspective of the status of teachers. Finally, the paper focuses on the essential changes in teacher education to enhance the status of teaching profession in the country.

S. Mohanraj has explained at length the meaning of professional development in general and of teachers' professional development in particular. He has also made a mention of the prevalent models, namely, the Craft Model, Applied Science Model and Reflective Model. He has specially emphasized on the role of societal participation, Teacher Development Groups, Action Research and ICT in the professional development of teachers. He has discussed the strategies of organizing in-service training programmes for teachers. He has presented the case studies of in-service education projects implemented by the Central Board of Secondary Education (CBSE) and Central Institute of English and Foreign Langauges (CIEFL).

In his paper titled 'Public Private Partnership' (PPP), **Shri Prakash** has attempted to delineate the (i) role of private sector in the development of education in general and teacher education in particular in the past, (ii) current status of public-private partnership in teacher education, and (iii) future possibilities and potential of PPP in teacher education. The expansion of schooling facilities, increasing enrolments and retention rate of students necessitate enhanced capacity for teacher preparation. The author has made a case for the adoption of PPP model in teacher education to meet the ever-increasing demand of human resource on the one hand and financial constraints in the government sector on the other.

V.P. Garg's paper analyses the growth of schools vis-à-vis teacher education institutions in India since 1951. He has examined the growth

pattern by type, level and management category with a special emphasis on 'equity' keeping in view enrolment pattern of children belonging to scheduled castes, scheduled tribes and girls. The analysis has revealed that there has been tremendous growth of schools, manifold increase in enrolment, reducing the gap between urban and rural areas in schooling facilities, significant improvement in the participation rate of girls and children of SC/ST categories. The analysis was further extended to work out the number of schools, enrolment, teachers and teacher education courses which would be necessary to meet the additional demand of teachers between 2007-08 and 2011-12, that is, during the 11th Five Year Plan period. The analysis has revealed that if the additional demand of teachers is juxtaposed against the approved intake of teacher education courses at 2007-08 level, the approved intake far exceeds the additional demand. However, the macro-level analysis of the demand and supply of teachers needs to be supplemented by the micro-level analysis at the state and district levels.

After analyzing the growth of TEIs after the establishment of NCTE, **Shoeb Abdullah** concluded that considerable expansion in teacher education facilities has taken place in all the regions of the country except the Eastern region. The expansion has mainly taken place in the private self-financing sector and there is near stagnation in the growth of Government institutions. The growth in the private sector can be attributed to the conducive climate for privatisation of education in the country, withdrawal of the state governments from the field and perception about teacher education as a sector of low investment and high returns. The expansion has not been balanced across stages of teacher education. As in the case of secondary teacher education, the supply far exceeds the demand, while in the case of elementary teacher education, demand exceeds the supply.

D.R. Goel and **Chhaya Goel** have brought out in their paper that almost all aspects of teacher education have been extensively researched in India, such as philosophy and psychology, history, sociology and economics of education. Special areas like educational technology, value education, population and environmental education, art education, special education, lifeskills education have also been investigated by the researchers. However, the research in teacher education has been, by and large, more of descriptive, analytical and evaluative type rather than forward-looking and advisory. Most of the educational researches terminate at findings as rarely there is any follow up. Educational Theorization demands Applied Education. A large number of theories of education have gone old. Every act of education needs to be theorized. There is a need to establish suitable norms for teacher education parameters. The process parameters have largely been neglected. The research scenario built, however, provides an insight into the educational problems in the Indian context.

Editors

Chapter 2

Teacher Education and the Education Commissions in Independent India: A Critical Overview

A.K. SHARMA

1. Teacher Education: The Backdrop

"People in this country have been slow to recognize that education is a profession for which intensive preparation is necessary as it is for any other profession." This concern expressed in the report of the University Education Commission (1948-49) is alive in its relevance even today. But the role of the teacher has been eulogized in our ancient past in the ideal of the "Guru" and in our policy documents. The Education Commission (1964-66) emphasized that "the destiny of the nation is being shaped in the classrooms". The National Policy on Education (NPE 1986/92) avers: "The status of the teacher reflects the socio-cultural ethos of the society; it is said that no people can rise above the level of the teachers". Such exhortations are an expression of the recognition of the important role played by teachers as transmitters and as inspirers of man's eternal quest for knowledge, of himself and of his external environment. If this role expectation is not to remain a mere rhetoric but is to be taken as a goal to be constantly striven for, we have to address ourselves afresh to an examination of the issues related to the preparation of teachers as well as the theory and practice of teacher education, as has been undertaken in the historical past, as it is operative in the living present and as it is likely to emerge in the developing future.

A large number of pertinent concerns in teacher education have been debated from time to time by various Education Commissions in the independent India. Some of them find implementation in varied forms but a good many of them seem to have defied intended solutions. Time has come when decisions should be taken at national and sub-national levels by universities, state departments of education and teacher education

institutions to come to grips with the problems so that what is needed for reorganizing and restructuring teacher education is in the direction of positive implementation. An attempt has been made here for revisiting the landmark documents of Indian education, namely, the University Education Commission (1948-49), the Secondary Education Commission (1952-53), the Education Commission (1964-66) and the National Commission on Teachers (1985) for the concerns deliberated by them in respect of teacher education and their linkage with the current discourse on this vital area in education.

2. Initial Preparation of Teachers: The Discourse on Duration

There has been a continuing discourse on alternative models of initial preparation of teachers as this is a foundational issue for understanding the structural aspects of teacher education. The question of duration of a professional programme also becomes significant as it defines its professional nature. The exercise to determine duration of professional training should involve:

- Spelling out the various tasks necessary for certification of a person to be entrusted with the education of children. Such an exercise which virtually amounts to preparing a profile of a teacher needs to be developed.
- The time required to accomplish the identified tasks and the need for formulating a time-task matrix.
- Inter-linkages between various stakeholders to ensure commitment to the profession on the part of the prospective teacher.

The above approach to understanding the issue of deciding the duration of teacher education has not taken place in the reports of the Education Commissions but a general perception seems to have dominated the recommendations that appear in their reports.

2.1 The University Education Commission (1948-49) based all its recommendations on the then prevailing 1-year duration with undergraduate degree as the entry qualification, a legacy of the colonial rule, and focused on secondary teacher education only, rightly so, as this sector of teacher education fell in the domain of the 'university' education, the purpose of the Report. The subsequent Commissions, however, did give some thought to the question of initial teacher preparation, with all its social and economic implications.

2.2 The Secondary Education Commission (1952-53) suggested as follows:

- The minimum educational standard for all *primary school teachers* should be class 10 or 11-year Higher Secondary Certificate (as suggested by the Commission) and their period

of training suggested to extend over two years consisting of training both in general and professional subjects.

- The educational standard for *secondary teachers* to be undergraduate and the duration may continue to be one academic year as prevailing but *as a long term measure, the duration of training could be extended to two academic years.*
- Extended duration not found immediately possible by the Commission, realizing that both financially and in view of the number of teachers required and also because the teachers themselves may find it difficult to spare two years for such training.
- Multipurpose orientation to school education recommended by the Commission led to the 4-year 'integrated' models of teacher education started in the Regional Colleges of Education (RCEs) of the National Council of Educational Research and Training (NCERT), as innovative experiments in teacher education during 1963-65.

2.3 The Education Commission (1964-66) essentially endorsed the duration as suggested by the Secondary Education Commission but added its concern for teacher education for the primary stage. It also added its own perceptions about the 4-year programme which had already been launched in the four RCEs, (now Regional Institutes of Training - RIEs). It recommended as follows:

- For the *primary stage,* a minimum of 2 years duration was suggested.
- For the *secondary stage,* where the duration of the course is only one year, it should be increased to 2 years (however, according to the Commission this did not seem feasible from a financial and practical point of view).
- A practical strategy according to the Commission would be to concentrate on improving the professional one-year course after the 1st or 2nd degree by extending the working days in the academic year from the existing level of 180-190 days to 230 days,

2.4 The 4-year Teacher Education Model

The Commission, however, commented on the 4-year 'integrated' teacher education programmes being offered in the RIEs of the NCERT since 1963. It felt that there was no evidence to show that the products of these integrated courses are better in anyway than teachers who have first taken their degree and then completed their professional education. Moreover, these integrated courses even when developed to their fullest potential can only provide very small proportion of the total number of

trained teachers required at the secondary level. The Commission was of the view that it will be wrong to place undue emphasis on such marginal experiments and that from the point of view of raising standards in teacher education it would be better to concentrate on improving the professional one-year course following the first or the second degree. According to the Commission, if such integrated courses need to be supported, they should be organized in universities rather than in separate institutions set up for the purpose as is now being done. It was of the view that such colleges necessarily prove to be expensive as regards staffing and equipment and suggested that this programme should be tried in universities having strong departments or schools of education which should work in collaboration with departments in other disciplines.

The very infrastructure of the RIEs - impressive campuses, workshops, science laboratories, libraries, multidisciplinary faculty to handle both subject specializations and related pedagogy was a strong pointer to professionalize the programmes of teacher education. It is rather unfortunate that such a vision of teacher education has till today remained confined only to the four RIEs although the experimentation with the model has proved its worth through the general quality of its products and their acceptability by educational institutions.

It is not the concern here to bring out the trials and tribulations undergone by these innovations in teacher education. However, it needs to be pointed out that the focus of making the 4-year programme resulting in a composite degree involving 3-year of B.A. / B.Sc. and 1-year of B.Ed. and seeking equivalence of the programme with these degrees of the universities did result in some distortion of the professional nature of the programme. This issue requires a detailed discussion before a final view can be taken on the merit of these programmes for wider replication but with improved design.

2.5 The National Commission on Teachers-I (1983-85) in the report entitled 'The Teacher and Society' suggested as follows:

- The duration of one year B.Ed. course should be extended by two summer months ensuring an academic session of 220 days with longer working hours.
- Vouched for integrated courses in teacher education advocating the minimum length of training for a secondary teacher to be 5-years after 10+2.
- Each state may make a beginning by introducing at least one 4-year integrated College of Education on the lines of RCEs of the NCERT.
- The 4-year programmes can be made into a 5-year programme in keeping with professional courses in medicine, engineering and law.

3. The Continuing Discourse on Duration: Post-Education Commissions

3.1 Teacher Education Curriculum: A Framework (1978) developed by the non-statutory National Council for Teacher Education (NCTE) recommended various alternative structures of teacher education for various stages of education. In fact, this could be considered a landmark document in the history of teacher education in independent India. It recommended not only semesterization of teacher education but also visualized the need of teacher education specific to each stage of school education. It was for the first time that pedagogic orientation of college teachers was articulated but its import is poorly realized by the Academic Staff Colleges of the University Grants Commission (UGC).

(a) *Pre-school Teacher Education/Primary Teacher Education*

- 4-semester professional education courses after Class 10; 72 credit hours
- 6-semester courses after class 10; 108 credit hours
- 4-semester vocational education course as a part of +2 after class 10; 72 credit hours
- 4-semester course in education as a discipline; 72 credit hours
- 2-semester professional programme after B.A./B.Sc.; 36 credit hours

(b) *Secondary Teacher Education*

- Separate teacher education for +2 stage visualized
- 2-semester course after B.A./B.Sc.; 36 credit hours

(c) *Higher Secondary Teacher Education (Academic & Vocational Streams*

- 2-semester course; 36 credit hours

(d) *Collegiate Education*

- 1-semester course; 18 credit hours

3.2 Teacher Education in the light of the Need for Value Orientation

It has been felt that value orientation should be the central focus of education and that teacher should be given necessary training in effective methods of development of values in students. Towards this end, a Working Group was constituted by the Government of India in 1981 to review the teacher training programmes with a view to promoting value education. The objective of the Working Group was to suggest necessary changes in the content and scope in the curriculum with special reference to development, among students and teachers, of the highest values of physical, emotional, mental, aesthetic, moral and spiritual culture as also

of values which are uniquely Indian and promote secularism, pride in heritage and composite culture. This was the first value-based focus on reviewing teacher education. This group deliberated on several aspects and worked out a detailed outline of the programme and recommended two streams of teacher training programmes:

- Five-year teacher education programmes, after senior secondary, leading to Master's degree in education.
- Two-year teacher education programme, after the first three-year graduation degree, leading to Master's degree in education.

This model of teacher preparation did not get acceptance by the institutions as it was totally focused on preparing a teacher who was more a symbol of value transmission than a communicator and a practitioner of handling various areas of school curriculum. What is perhaps needed now is to synthesize the concerns into a new blended curriculum. The model has till date remained confined to the pages of the report.

The Curriculum Framework for Quality Teacher Education, NCTE, 1998, recommended 2 years' duration of teacher preparation for Pre-primary, Primary and Elementary after the 10+2. For the Secondary and Senior Secondary stages, it recommended 2 years' duration after graduation and post-graduation respectively. In respect of integrated courses it recommended a duration of 4 years after class 10 for Pre-primary, Primary and Elementary stages of education, while for the secondary, it recommended 4/5 years after the 10+2.

3.3 Time for Decisions: The Debate has Gone too long!

The NCTE must give some fresh thought to this aspect and come out with an unequivocal pronouncement on the duration of initial teacher training. The NCTE needs to reconsider whether it can continue to accord its approval both for one year and two year B.Ed. programmes. If it means a policy change, then it must unequivocally state that henceforth secondary teacher education shall be a two-year programme and the existing one year institutions should convert themselves into two year institutions over a period of time, say three years.

If the NCTE wishes to support longer duration teacher education programmes, it must initiate a serious discussion on such programmes at the same time outlining its curricular structure and organizational design. It has given special permission to some colleges of Delhi University to offer four-year Bachelor of Elementary Education (B.El.Ed.) as an innovative model for elementary school teachers, offered in some institutions of the Delhi University. The NCTE has also been approached by some institutions to offer five-year integrated programmes leading to Masters' Degree in Teacher Education but no policy decisions have come up.

4. Residential Training Institutions

In a short duration teacher education programme, which is the situation at present, time at the disposal of the student teacher is so limited that his whole time should be devoted to the study of various aspects of education, school life, community life, administration, etc. Life in the training institutions should be a guide to the activities in the school with the pupils. It is, therefore, to emphasise that this community life in the training institutions, the devotion to the various activities that can be attempted in such institutions and the mixing of the student teachers themselves in all social and useful activities both in the school community and in the community life of the area where the school is situated, would best be promoted by a residential system of training. The Secondary Education Commission (1952-53) strongly advocated a residential type of teacher training institution for all students. Such residence will train them in self-reliance, provide a certain amount of manual labour and cultivate community life within and outside the school premises. In such a system, the student teachers will be able to acclimatize themselves with the features which have a bearing on development of holistic teacher personality.

5. Breaking the Isolation of Teacher Education

Although the idea was earlier mooted by the Secondary Education Commission (1952-53), the Education Commission (1964-66) attached great importance to breaking the isolation of training institutions, which are isolated from university life, from schools and also from one another. This, in their opinion, was one reform that could achieve a breakthrough to vitalize teacher education and through it the process of learning and teaching in our classrooms. The Commission recommended the following:

- Education should be brought into the mainstream of the academic life of the universities.
- Education should be recognized as a social science or an independent discipline and should be introduced as an elective subject at the under-graduate and post-graduate stages.
- Such a programme should be sponsored by the UGC in a few selected universities and develop speedily on a large scale. In each selected university, a department or institute preferably a school of education should be established to develop research and training programmes in collaboration with other programmes. The study of education itself will also begin to receive the enriching inter-disciplinary attention that is now lacking.
- An extension department should be established in each training institution – pre-primary, primary or secondary – and should be regarded as an essential part of the programme and the responsibility of the training institution as a whole.
- Teacher education institutions should have effective Alumni

Associations. A close link between old students and the staff has immense potentialities for making teacher education dynamic and progressive.

- Student teaching must be made into a comprehensive internship in which trainees are able to observe the entire work of the school and participate actively in all the important professional activities both in and out of the classroom.
- *The ultimate objective should be to bring all the teacher education institutions under the universities in such a manner that they continue to function in close collaboration with state education departments and teacher organizations.*
- Comprehensive colleges should be established wherever possible to prepare teachers for several stages of education and/or a number of special fields. What is now needed is a planned attempt to develop more institutions of this type and to add sections for training primary and/or pre-primary teachers to training colleges that prepare teachers for secondary schools only.

The above recommendations of the Education Commission (1964-66) are as valid today as they were at the time of their formulation. Considerable time has already been lost over the years in implementing the recommendations. The UGC, NCTE and NCERT can probably take this as a priority agenda for implementation, at least as of now.

6. Choice of Students / Quality of Intake

The Commission had even focused their attention on the fact that only those students should be admitted who hold the highest promise of becoming successful teachers. The fact has remained even today that a majority is made up of those who enter this profession after futile hunting for other jobs. It was suggested that admission to teacher training institutions should generally be based on carefully devised tests and interview as the system cannot afford to waste money on training people who have not the making of good teacher.

Indeed the professional status of a programme is linked with the quality of the intake that joins the profession and the rigour that characterizes the various aspects of the programme. Since becoming a teacher is generally the last resort of a person, it becomes important to ensure that the teacher training programme compensates for the mindset arising out of such social deficiencies. The quality of education largely depends upon the quality of teachers which, in turn, depends upon the quality of those who join the profession at the time of initial training. Admission to institutions of teacher education should be carefully made to admit only those who have the highest promise of becoming successful teachers. But how do we select such persons? Presently, "admission test" is conducted by the universities and other state level agencies to identify

the clientele for admission. However, it is important to re-examine certain pertinent concerns.

- What elements which give a fairly good indication of the promise of a person to become a good teacher should comprise the admission test?
- What should be the nature of such a test? Should it consist of written test, test of aptitude, communication skills, performance in interview, etc?
- Should such tests be conducted at the state level by the university for the institutions affiliated to it?
- Could individual teacher education institutions be allowed to conduct such tests for admission to their respective institutions?

Almost every state is now conducting admission to the training institutions for all stages on the basis of a Common Entrance Test, the purpose obviously being to eliminate those who are unfit to be admitted to the teacher training programme. It requires serious debate as to whether such tests really identify the right talent for a teaching career. It has also come to notice that in some cases almost all who appear in the examination get admitted thus putting a question mark on the very purpose of conducting the admission test. This has happened in one state, may be because of proliferation of teacher education institutions particularly at the secondary level.

7. Teacher Education Curriculum

The coursework of any teacher education programme generally comprises some core papers dealing with philosophical, sociological and psychological foundations of education apart from courses related to methods of teaching and some elective papers. This aspect did not escape the attention of the Education Commission. The non-statutory NCTE was the first to evolve a document called "Teacher Education Curriculum - A Framework" with the involvement of UGC Panel on Teacher Education to revamp teacher education pertaining to all stages of education. The unique features of this framework were the following:

- Teacher education was made task-oriented and less theoretical.
- The instructional time was apportioned to various tasks as follows:
  - Pedagogical theory including Teacher and Education in the Emerging Indian Society, Educational Psychology; special courses according to needs and facilities available, 20%
  - Content-cum-Methodology and Practice Teaching including related practical work, 60%
  - Working with the Community, 20%

- Health and Physical Education suggested to be made an integral component of teacher preparation.
- Accumulating of credits leading to teacher education degrees/diplomas.
- Interaction with the university system to influence revamping of university curricula in tune with 'Teacher Education Curriculum: A Framework'.

7.1 School Curriculum to Gel with Teacher Education Curriculum

The task of revamping teacher education curriculum in the real sense has always remained daunting. Inadequacy of sustained intensity of experiences offered in the teacher education programmes is leading to mismatch between the teacher education curriculum and the school curriculum. School education can achieve its intended objectives only if there is corresponding reflection of the same concerns in the programme of teacher education as teacher is the pivot on which the outcomes expected of any educational system can blossom. These concerns dominated the leaders of the nation through the establishment of various Commissions, Committees, Working Groups, etc. from time to time. The implication of establishing such Commissions was far-reaching as this was to provide the foundation on which the ultimate edifice of Indian education in the post-colonial era was to be developed and nurtured. This had also an in-built concern for modification of the programmes related to training of teachers to handle the onerous task of building a free nation. The recent National Curriculum Framework 2005 has made certain paradigm shifts for teacher education. A fresh National Curriculum Framework for Teacher Education needs to be urgently evolved which should become the new basis of revamping teacher education programmes at various stages of school education.

The National Curriculum Framework (NCF 2005) has advocated constructivism as a major paradigm for learning. *(Constructivism: Learners actively construct their own knowledge by connecting new ideas to existing ideas on the basis of material/activities presented in individual as well as collaborative situations. Active engagement involves enquiry, exploration, questioning, debates, application and reflection.)* This is a welcome feature in several ways:

- Puts the learner – the child – at the centre of the educational process.
- Departs from extremely fixed 'reductionistic' norms of learning.
- Emphasizes activities/experiments in science education as one of the important ways to facilitate construction of knowledge by children.
- Respects children's knowledge concepts, even if they differ from standard concepts of science. ('Respects' not to be equated to 'accepts'.)

- Views teacher not as a transmitter but as a facilitator for knowledge construction by the child.
- Aims to build up scientific concepts (at least partly) through 'local' contextualized knowledge.

There has been much debate on local versus global (or standard) knowledge in regard to science. If local knowledge is intended to mean knowledge in the context of the learner's environment (e.g. knowledge of learners in tribal communities about plants) or local technological skills and practices, there is really no issue. If, however, it is supposed to include all manner of local beliefs and myths, it can indeed be problematic for science education. Teachers will need to be sensitive to the difference.

Constructivism can mean different things to different people. NCF 2005 probably views it as a pedagogic paradigm and that is how it should be looked at. In particular, it should not be equated to relativism. *(Relativism: knowledge is basically a social-cultural construct; there is no absolute criterion by which to judge which one is 'better' or 'truer'.)* Again, teachers will need to be made aware of these matters.

8. Process/Pedagogy of Teacher Education: The Transactional Aspects

There are several concerns which need to be discussed in depth in order to formulate the processes and pedagogies of teacher education. Any attempt to develop teacher education curriculum, both in terms of content and methods, will require attention on several issues such as the ones listed below.

Presently, teacher education is stage-specific, for example, the pre-school, primary, elementary, secondary, etc. Considering the specific nature of learners in each of these stages, it is understandable to plan for stage-specific teacher education programmes. The present day realities are such that the system is utilizing the professional training in general for any level of school education. A case, therefore, may be made in favour of formulating a teacher education programme which orients a prospective teacher to the pedagogical aspects of different stages. It is also significant to ensure that the demands on school curriculum are effectively matched with those of teacher education curriculum. For example, the emphasis on developing courage to question, spirit of inquiry, objectivity, creativity, problem-solving skills, decision making skills and aesthetic sensibility are critical concerns to be developed in the children. A teacher education programme must clearly focus on these in the theory and practice of teaching. Presently, these dimensions remain somewhat dormant.

The evolving concerns in teacher education also need to consciously take into account the ground realities of the education system in preparing teachers who can effectively handle these realities. To mention a few, pedagogical training should deal with concerns such as the following:

- Handling large sized classes.
- Methodology of teaching in multi-grade settings.
- Implications of inclusive education to give practical shape to integration of physically and mentally challenged children in normal settings, also including other marginalized and socially disadvantaged.
- Perspectives related to gender equality including all forms of discrimination.
- Requirements of slow learners.
- Special concerns of gifted learners.

If integrated models of teacher education take some shape in future it would be relevant, while designing such programmes, to point out the nature of integration, for example, how integration can be reflected in the design of a programme and how integration takes place in the mind of the teacher.

8.1 Training Methodologies vis-à-vis Teaching Methodologies

In the teacher education curriculum, the methodology component occupies an important place. It is here that different approaches are taught to the trainees about the art of handling classroom dynamics. Experience tells us that this often turns out to be routine drill and does not leave any scope for the student teacher to design his/her perceptions about how learning can be imparted meaningfully. There is more emphasis on teaching but relatively much less on ensuring the intended learning. We need to learn from programmes offered by management institutions where students are trained in their respective assignments through meaningful participative strategies. We need to spell out what goes into training methodologies apart from teaching methodologies as part of pedagogical orientation, particularly of teacher educators.

Teacher education programmes in that case should focus on self-directed learning and development of 'learning to learn' skills. Specifically, this would mean that teacher training should stress on:

- Training and perfecting of tools of acquiring knowledge viz., observation, inquiry, discovery, intuition, analytical reasoning, synthesizing, imagination, creativity.
- Training in the location, selection and use of different learning resources viz., library, laboratory, educational media and materials, experts, teachers.
- Training in evaluating progress towards achieving learning goals and assessing the effects on their performance.
- Development of information processing skills rather than memorization of information.

9. Organisation of School Practice/Internship in Teaching

Issues regarding supervision of the lessons and the choice of the school for practical work have dominated the deliberations of Education Commissions all through as a problem which is the heart-throb of teacher education. The system of organization of school practice reveals that it varies very greatly in efficiency from one institution to another. The best of them succeed in giving them a blend of school practice under satisfactory conditions and of intellectual content, adequate to make the student think that both the problems they confront in school practice and the wide philosophic and sociological implications of their profession. In the worst of them, the school practice is completely insufficient and defective while the theory is vague and unrelated to actual conditions.

The University Education Commission (1948-49), while analyzing teacher education programmes felt that too little time was given to school practice, too little weight was given to practice in assessing the students' performance and conditions of school practice are often unsatisfactory, a situation as relevant today as it was stated then. In fact, the students are never failed in the practical test and the effort continues till the student passed muster! It is not surprising that under these conditions the schools do not regard the possession of a professional degree as the slightest real guarantee that its holder can better teach or control a class. The Commission recommended that in a year's course, not less than 12 weeks should be spent by the student in supervised school practice, (not expecting that the supervisor should be present throughout the 12 weeks).

In the first place, the Commission felt that a training department has no right to admit a number of students greater than can be given proper school practice facilities. In the second place, it is not at all a difficult matter and some teacher education institutions have fully achieved it to make schools realize that students coming into practice – not, of course, in overwhelming numbers – are a real asset. Almost all schools suffer from excessive routine and the infusion of a little temporary new blood from time to time in the form of students practicing is good for all parties concerned, not merely the student teachers but the teachers and the children.

A connected issue to the shortage of schools for practice, there is a tendency to argue that a school could only be used when the college supervisor could dictate either the whole curriculum or at least the content of lessons to be given by the students. It is good for students and even good for their supervisors to fall in line with the current practice for a school and make the best of it. The training department should have sufficient choice in the school if it was to prevent it from having to use a school whose methods or tone were quite intolerably bad, the Commission felt.

The importance to be attached to teaching practice in schools cannot be over-emphasised. The Commissions have also commented that it will

be conducive to sound training if every teacher training institution has a Demonstration School, more commonly called a Model School as well as a certain number of other schools at a reasonably near distance associated with it for purposes of practical training. At present, the practical training for student teachers is very limited and in some places almost non-existent. However, the Commissions felt that the practical training should consist not only of practice in teaching, observation, demonstration and criticism of lessons, but should also include such subjects as the following :

- construction and administration of scholastic tests.
- organization of supervised study.
- students' societies.
- conducting library periods.
- maintenance of cumulative records.

The scope of teacher training, particularly in its practical aspects, should be broadened to include some of these activities that a student teacher will be expected to perform when he/she becomes a full-fledged teacher.

Technically, the school practice should become the basis of development of theoretical perceptions about teacher education. Implications for increasing amount of school practice would mean using more schools but they do not generally like being used for practice. The training institution should not, therefore, admit a number greater than can be given proper school practice. The Commissions went to the extent of saying that towards improving the situation, governments must come to the help of the universities and make it a condition of aid or even recognition to suitable schools that they shall play their proper part in the practical training of the recruits whose services they subsequently intend to use.

In fact, one of the conditions of grant of recognition by NCTE to a training institution should be to ensure that the institution has the support of the schools for granting appropriate practice teaching facilities. The ideal situation should, however, be that a training institution should have its own laboratory in the form of a Demonstration School as an integral part of its infrastructure. *Unfortunately, this has taken a peculiar turn as in a recent development, schools are now seeking permission to run a training institution within the school on the plea that they can provide the required infrastructure of space. The intentions behind this appear to derive more from commercial considerations.*

10. Training in Activities Integral to Teacher Education

Preparation of a holistic teacher whose functions extend beyond classroom was an important concern expressed by the Secondary Education Commission (1952-53). It felt that in view of the importance attached to co-curricular activities, every student teacher should have special training in one or other of the co-curricular activities. The object of

such training is not to supplant the fully trained personnel, but rather to supplement their activities and to give them valuable assistance in this respect, for example,

- A short course of training in school librarianship will enable the teacher concerned to give valuable assistance to the trained librarian of the school.
- Training in physical education will enable the teacher to co-operate with the medical officer and with the physical education teachers in looking after the physical welfare of the school children.
- So far as medical care is concerned, student teachers can be given a short period of training in regard to certain fundamentals of school health and care of the children. The school teachers trained would form a useful link with the other trained staff in looking after the health and welfare of the school children.
- Each training institution must develop along these lines so as to supplement the usual teacher training programme by intensive courses over short periods for teachers with particular aptitudes in any of the co-curricular activities, in addition to the following:
    - training in school administration
    - audio-visual education
    - school broadcasts, social education
    - scouting and guiding
    - citizenship training
    - Junior Red Cross
    - training in conducting students' clubs, debating societies, etc.
    - social service and community life

Many of these activities require a good deal of knowing and preparation if they are to be effectively utilized in the school programme, the Commission observed.

11. Training in Special Subjects

The Commission was conscious of the training interventions for certain special subjects. There are certain special types of training which are being given in different institutions. Physical education, for instance, is at present given in specialized institutions for the purpose. Likewise, training for handicapped children, for deaf-mutes and the blind are given in separate institutions. Rightly so, for the effectiveness of the training will be preserved only if given in institutions where the principles of pedagogy in relation to these particular subjects concerned will be given due emphasis. In the context of today, some of these concerns should be a part of regular teacher education programmes leaving scope for

specialized training to teaching and research in these areas at an advanced level.

12. Education as a "Discipline"

All the Education Commissions recommended to bring Education to the centre stage of University education as a discrete discipline as well as a focal point of teacher training. Education as a study at university level is peculiar in this aspect that in whatever direction it is studied to an advanced level, the study tends to become something other than education, for example, it turns into a study of philosophy or psychology or history or sociology. However, it remains true that education is an essential focal point for the various studies and skills necessary for the tending teachers. It is also true and important but by no means always grasped that those responsible for training teachers must look at the whole course from this focal point, that is, the place of school in the nation's life and the right training of children in the school. If this outlook is lacking, the course will become distorted, even if the separate elements in the course are taught by quite learned and competent philosophers, psychologists, historians and sociologists.

A second unique feature of education as a university study, though this it shares with several other professional courses, is that it cannot consist of theoretical instruction alone. Theory and practice must go hand in hand and each must support and throw light upon the other. In the ideal training course, something like equal amounts of time and equal weight in assessing the students' result should be given to theory and to practice. On the one hand, 'no body has ever yet been lectured into becoming a good teacher, nor even read himself into becoming a good teacher. On the other hand, if skill in practice were the sole aim, there would be no need for a course in theory and a year's practical apprenticeship in a school could take the place of the existing training course'.

12.1 Post-Graduate Courses in Education

A clearer conception of what is intended by the Master's degree in education seems to be required. The Commission felt and even ventured to suggest, the objectives of the post-graduate programme in Education :

- to give ideas through the study of comparative education of modern methods that are being followed in different countries,
- to cultivate aptitude for research so that experiments on new methods and techniques of education suited to the country and the community may be undertaken,
- to afford opportunities for specialization in one or other of the branches of study pertaining to:
  - the curricula of school studies,

- Training teachers for higher grades in the profession such as the headmaster, the inspectorate, and teaching staff of training institution.

In fact, this higher education should be designed to inculcate the qualities of leadership in education.

At present the Master's degree can be taken immediately after the first degree in education. But the Commission was bold to suggest that it would be an advantage if for this higher degree in education trained teachers who have done normally a minimum of three years teaching in a school are only selected. It is desirable that a certain number of scholarships should be made available for such teachers for the period of study they have to put in for the higher degree and that the teachers concerned may be selected after consideration of their qualification, their record as school teachers, their aptitude for research shown by any contributions that they may have made, their general personality and their conduct in the profession.

13. Research in Education

The institution for teacher education should in essence be not merely an institution for training teachers but also an institution for research work in all aspects of pedagogy. This was an exalted expectation of the Education Commissions. The staff of such institutions should be such as would be capable of devoting some of their time to research in curricular and extra-curricular activities, general administration, modern trends of pedagogy and also, from time to time, research to evaluate results of the particular methods of training adopted in different schools. It is for this purpose, the Commission felt that every training institution desiring to conduct educational research should have under its control an experimental or demonstration school, besides the practicing schools.

A major weakness mainly responsible for the comparatively low status of professional studies in teacher education is the absence of adequate research on problems of education including pedagogy under Indian conditions. Educational Research and Innovations Committee (ERIC) of NCERT is already seized of this inadequacy as is evident from the trend reports of researches documented in the various surveys of educational research. Substantial numbers of these researches are not directly linked with improving classroom practices and related pedagogical concerns.

There are some other concerns which dominate discussion in the field of teacher education which have implications for culture and values. There is a discussion on Indianization of teacher education. What does it actually mean? Do we need to derive from our ancient thought and also the wisdom of the Indian thinkers in education to formulate our curriculum? It is one thing to discuss Indian thinkers in education, it would be quite another to design teacher training pedagogies based on the thoughts of these thinkers. Are there indigenous pedagogies? If so, how do we reflect

them in our teacher education programmes in today's context? Perhaps there is need to study indigenous learning patterns in our own sub-cultures.

14. Profile of Teacher Educators

One major area of weakness in existing teacher education programmes is the quality and experience of those who have the responsibility of training young entrants to the profession of teaching. These teachers are professionally known as teacher educators and identified as a class by themselves. A large majority of them may themselves have no direct experience of teaching school children. Since they have to instill the methods amongst the student teachers without themselves having the confidence of presenting a model lesson in a school context, they cannot create a convincing impression on the learners. It is felt that the issue should be discussed to define the profile of teacher educators and a scheme for their professional development prepared. Nothing will change significantly in the preparation of teachers if the corresponding changes are not visualized in the preparation of teacher educators. A detail perspective of the preparation of teacher educators is dealt with in a separate paper included in this volume.

14.1 Teacher Educators and First Hand Experience of School Teaching

The career of a school teacher in India is certainly not well paid. Even if the graduates tend to choose it as a last resort among professions, they can still be led by skillful handling of their training course to realize that it can be, as has been well said, "though the worst paid yet the most rewarding of the professions". But this is quite impossible for this sense of vocation to be instilled by a staff who have never themselves taught in a school. They need not have many years of school experience and there is a room on the staff of training institution for a few specialists who have not been school teachers. But the bulk of the staff including emphatically the lecturers in education and in methods must be able to speak from first hand experience of school teaching if they are to command respect of their students and have any chance of convincing them that they are entering a noble career. It should be a condition of recognition for all training institutions that not less than a named proportion (at least 50 per cent) of the staff should have had school teaching experience. This is how the Commission visualised the expectation of a teacher educator.

15. Professional Development of Teachers

A profession is characterized by features such as choosing the right clientele to nurture the demands of the profession, a minimum duration of professional training considered necessary for initial entry into the profession, a rigorous curriculum which cannot normally be handled outside an institutional framework, commitment to continuous learning on the part of the teacher and a code of professional ethics.

However excellent the programme of teacher training may be, it does not by itself produce an excellent teacher. It can only engender the knowledge, skills and attitudes which will enable the teacher to begin his task with a reasonable degree of confidence and with the minimum amount of experience. Increased efficiency will come through experience critically analysed and through individual and group efforts at improvement. The teacher training institution should accept its responsibility for assisting in the in-service stage of teacher training. Some of the activities which the training college should provide or in which it should collaborate are: (1) refresher courses; (2) short intensive courses in special subjects; and (3) practical training in workshop, seminars and professional conferences. It should also allow its staff where possible to serve as consultants to a school or group of schools conducting some programme of improvement.

The National Policy on Education (1986) looked at the role of the teacher and expectation from teacher education in a holistic perspective. It mentioned that the government and the community should endeavour to create conditions which will help, motivate and inspire teachers on constructive and creative lines. Teachers should have the freedom to innovate, to devise appropriate methods of communication and activities relevant to the needs, capabilities and concerns of the community.

A significant recommendation of the NPE/PoA was the formulation of a centrally sponsored scheme on restructuring and reorganization of teacher education as a key step towards its 'overhauling'. Among the significant components of the scheme are:

- Making pre-service and in-service components of teacher education inseparable. This meant periodic and recurrent orientation of teachers not only in different subjects but also relevant pedagogy.
- Mass Orientation of School Teachers to apprise teachers of the basic thrusts of the policy and role of teachers in achieving the policy goals.
- Establishment of DIETs with the expectation of operationalizing the following vision:
  - Designing convergence of formal, non-formal and adult education. Planning and management perspectives to be incorporated into teacher education programmes.
  - DIET to be the nodal centre for educational development of the district.
  - Identification of 'Lab Areas' for DIET's own learning to focus on a contextual curriculum.
- Strengthening 250 Colleges of Teacher Education (CTEs) and upgrading 50 of them into Institutes of Advanced Studies in Education (IASEs) as technical resource support structures for secondary as well as elementary teacher education.
- Strengthening State Councils of Educational Research and Training

(SCERTs) to perform a networking role in establishing interlinkages between teacher education institutions.

- Strengthening university departments of educational studies.

The beautiful vision of professional development of teachers as contained in the Centrally Sponsored Scheme of Teacher Education needs to be translated into action. The national evaluation of this scheme leaves the system high and dry. A well-designed analysis of our failures to implement this scheme in the right perspective is immediately called for. This important concern of professional development has been dealt with elsewhere in two papers one dealing with Professional Development of Teachers and the other on Professionalization of Teacher Education.

16. Status of Teachers

All Education Commissions have been convinced that the most important factor in the contemplated educational reconstruction is the teacher – his personal qualities, his educational qualifications, his professional training and the place that he occupies in the school as well as in the community. The reputation of a school and its influence on the life of the community invariably depend on the kind of teachers working in it. But it cannot be lost sight of that as long as the conditions of service and salary are unattractive and the status of teacher remains low and unimportant, compared with other learned professions, there is no possibility of drawing large number of really qualified, enthusiastic candidates to join the profession as their first choice. Under this reality, how does teacher education acquire a status commensurate with the professionalism associated with it? This aspect is perhaps dealt with in another paper on Status and Recruitment of Teachers: Implications for Teacher Education included in this volume.

17. Gender Perspective in Teacher Education

The gender perspective in teacher education, so far as the nursery and primary stages of instruction are concerned, the Commissions felt that women are better teachers than men. In regard to upper primary schools also, a considerable body of opinion is in favour of giving ample opportunities for women to be employed as teachers in these institutions. In girls' schools obviously women should be the teachers. A rapid expansion of girls' education depends to a very large extent upon the availability of women teachers. This question needs to be examined very carefully. Under the present conditions, it will not be possible to recruit adequate number of women student teachers in the existing training institutions and, therefore, special efforts should be made in this direction.

As a short-term policy, at any rate, part-time courses being made available to women who could spare a little time and who with the appropriate training take up teaching as part-time workers was also

visualized in the reports. Such part-time training may be in the morning or in the evening but necessarily the total period of training will have to be extended. These part-time student teachers should also be eligible for some stipend during their period of training and if such stipend is given they should undertake to perform the duties of a teacher for a minimum period of three years.

18. Professional Preparation of Teachers in Higher Education

The Education Commission observed that at present there is no provision for the professional initiation of a university teacher. He/she receives no initiation into his/her duties and no orientation to profession. He/she even lacks at times the knowledge of the mechanics of his/her profession which involves curriculum planning including aspects related to evaluation techniques. In this situation the teacher is generally content to copy mechanically the methods and procedure adopted by his/her own teachers and inflict them on his/her students. By and large, the tradition of giving lectures and dictating notes gets passed on from one generation of teachers to another. There is no intention of suggesting establishment of full-fledged training colleges for them. The institution of Academic Staff Colleges needs to be looked into and specialized training methodologies appropriate to higher education need to be developed. It is emphasized that such specialized training for teachers of higher education should not be a replica of B.Ed. programme.

19. Norms and Standards in Teacher Education

The Education Commission (1964-66) had deliberated on the aspect of maintenance of standards in teacher education and had suggested that UGC in collaboration with NCERT set up a joint Standing Committee on teacher education. The Committee was to be concerned with all aspects of teacher education, general and professional, at both under-graduate and post-graduate levels. A lot of development has taken place since the recommendation of the Education Commission. A non-statutory NCTE was created by the Government of India by a resolution in 1973 to influence quality teacher education in the country and to check the menace created by the proliferation of poorly planned correspondence courses in teacher education. In order to bring some order to the disturbing situations in the field of teacher education and the inadequacy of the non-statutory status of the existing NCTE at that time, the NPE recommended providing necessary resources and capabilities to the NCTE to maintain standards and norms in teacher education. In pursuance of this goal, the NCTE was set up by an Act of Parliament in 1993 and it commenced its statutory functioning with effect from August, 1995. This was a landmark decision in the history of teacher education.

As events open themselves, NCTE has evolved norms for various teacher education programmes but these norms have been ingeniously

circumvented by the mushrooming growth of private teacher training institutions, particularly at the secondary level. The menace of correspondence education modality for teacher education led to huge enrolments by universities from which the revenues to the university system were substantial. The NCTE did succeed in controlling this menace but it had no way to check the aspiration of people to earn a degree in teacher education by whatever means. The aspiration which led to mushrooming of correspondence courses provided all the inputs of revenue to privately managed teacher education institutions in much more serious proportion. NCTE has a lot to address itself to, generating process norms and developing monitoring strategies to ensure that teacher education institutions at least function with a modicum of the required sensitivities to the teaching profession. There is also need to take a fresh look into the existing norms for distance education and teacher education formulated by NCTE in collaboration with UGC, Indira Gandhi National Open University and Distance Education Council. Distance Education is a significant modality for in-service professional development of teachers and teacher educators and should be boldly developed. It enables a larger coverage of teachers in a shorter time making available the best resource support from experienced professionals.

20. Manpower Planning and Teacher Education

One of the provisions of the NCTE Act is 'to coordinate and monitor teacher education and its development in the country'. No survey of requirements of teachers for various levels and stages of school education has as yet appeared on our educational scene except the one conducted by the Institute of Applied Manpower Research in 1998. In the absence of such data there is no possibility of even making a suggestion to the state governments and other decision making authorities to ensure whether any new teacher education institutions are required and if so for what level and in what geographical areas so that there is no unwanted concentration of such institutions in areas where they are not needed. This aspect is very significant in view of the fact that many institutions whose major areas of interest are in engineering, technology, medicine offer B.Ed. courses in the same premises as they can afford to spare more rooms and infrastructure in accordance with the norms of NCTE. The professional character of teacher education has been hit very hard by such a lackadaisical approach to give approval for such institutions.

Linked with this is another unfortunate reality, that of institutions seeking recognition adopting devious means to satisfy the NCTE visiting committee. They not only hire equipment but also staff thus violating basic values which teacher education institutions are expected to instill amongst those who have to shape the 'destiny of the nation'.

21. Teachers for Vocationalization of Education

Vocationalization of education particularly of higher secondary education was recommended by the Education Commission (1964-66) but unfortunately this concern has not seen the light of effective implementation as was visualized. Vocational programmes visualized by various Commissions and Committees as part of school education have not taken root. The traditional school system does not seem to be geared to offering vocational programmes and the situation is much worse when it comes to teacher preparation for vocational areas. In order to make success in this area, we need to come out clearly on whether vocational education has to be part of school as visualized by the Commission or part of a system outside the school.

22. Teacher Education Institutions as Educational Leaders : A Hope for Future

The Secondary Education Commission (1952-53) had envisioned that the training colleges assume the role of leadership in the task of educational reconstruction. The impression was that they have not so far been able to do so. It was visualized by the Commission that they should become active centres not only of research but also of practical experiments directed to the improvement of educational methods, curricula, discipline and organizing of schools. Such institutions were to act as pace-setters in teacher education. They should, in the first instance, successfully work out new ideas in their own Demonstration Schools and then, through the example of the schools as well as the training given to their students. This influence should permeate into all institutions of the State. At present, their work is greatly vitiated by the fact that there are considerable ideas advocated in the lecture room which are not actually translated into practice in the schools under them.

In order to perform the leadership role, it would be an advantage if each training college could be given the responsibility of supervising the work of a certain number of schools in the neighbourhood, which would, on the one hand, improve their standards and, on the other, enable the members of the staff to give practical shape to their ideas. It is a matter of conviction that if the training colleges could be organized on right lines and become dynamic centres of progressive educational movements, the whole task of educational reconstruction would be greatly facilitated. A prophetic concern expressed by the Secondary Education Commission almost 55 years ago can be a great promise for futuristic vision of teacher education. It should also be an important feeling that no issue which affects the quality of teacher education has escaped deliberations of various Commissions. The best hope is to move towards effective implementation.

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Chapter 3

Teacher Education Curricular Reforms Since 1978: A Critique

SAROJ PANDEY

1. Introduction

An educational renaissance which is predicated on the changing vision of teaching and learning is in the offing. The new vision expects teachers to help students develop rich understanding of content, think critically, construct and solve problems, synthesize information and express themselves proficiently. Quality is the key word reiterated worldwide as the need to raise the standard of education is accepted as a priority of all governments. However, if these efforts are to succeed, it is imperative that teachers are professionally well-equipped with the content and pedagogical knowledge to meet the challenges arising out of emerging vision. Teacher education, in this context, has been considered as a dynamic and life-long process, which starts with the pre-service teacher preparation. It is, therefore, imperative to review and reformulate the teacher preparation curricula to equip the teachers to translate the vision into reality and thereby to become the change agents.

2. Teacher Education Curriculum Reform: Policy Initiatives

India has a long history of colonial rule and has been struggling hard ever since her independence in 1947 to break the shackles of its colonial past and develop an indigenous system both of school education and teacher education rooted in its own socio-cultural contexts and realities. A number of significant attempts have been made by curriculum planners to modify teacher education curriculum to suit the context specific requirements of the country. In fact, the first two decades of the post-independence period are characterized by sincere efforts to break from the colonial legacy and modernize the teacher education curriculum along with the school curriculum. The concern for quality improvement and

indigenisation of teacher education had been at the top of the reform agenda which has been reflected in the concerns expressed and recommendations made by various Commissions and Committees appointed by the Government of India from time to time since independence. The University Education Commission (1948-49), Secondary Education Commission (1952-53) and several seminars and study groups that were set up to discuss improvements in elementary and secondary teacher education immediately after independence of the country, expressed concern over the poor quality of teacher education, its isolation both from the mainstream of university life and the ground realities of schools and made a strong case for flexibility, local specificity and overhauling of teacher education to strike more balance between the theory and practice and assessment of students' performance.

The University Education Commission (1948-49) appointed immediately after independence suggested making teacher education courses more realistic and flexible which may provide a true picture of school life to students. It advocated more weightage to 'school practice' and assessment of students' performance. While acknowledging the variation in terms of efficiency of teacher education courses being offered by various universities, the Commission expressed concern over the theoretical nature of these courses and unrelatedness of theory and practice. It acknowledged that 'theory and practice must go hand in hand and each must support and throw light upon the other' (p. 212). It further suggested: 'In the ideal training course something like equal amount of time and equal weight in assessing the student's result should be given to theory and to practice' (p. 212). About the existing courses, the Commission observed, 'Our main criticism of the existing courses is that too little time is given to school practice, too little weight is given to practice in assessing the student's performance, and conditions of school practice are often unsatisfactory, sometimes quite grossly unsatisfactory' (p. 213). Emphasising the need to make teacher education programmes context specific, the Commission recommended: 'Theory of education must be flexible and adaptable to local circumstances if it is to mean anything real to its students....Real education is....a life to be lived and purposeful activities to be shared' (p. 215).

The Commission, for the first time, emphasized the need of specialized training for teachers to handle children having physical as well as mental handicap. Besides, it also suggested that the general principles of mental hygiene should be introduced as essential component of teacher preparation programme in order to develop insight among the prospective teachers into the behaviour problems of ordinary children; and that internal assessment of student teachers be supplemented, where necessary, by sample test by the Board of Examiners conducting the university examination.

A number of training programmes in various co-curricular activities, such as a short course of training in school libraryship, training in physical

education, certain fundamentals of school health and care of children, training in school administration, audio-visual education, school broadcasts, social education, scouting and guiding, citizenship training, junior Red Cross and training in conducting students' clubs, debating societies and organizing social service and community life, had been suggested by the Commission to provide wider and real life experiences to student teachers during the tenure of their training.

The Secondary Education Commission (1952-53), like the previous Commission, made only a temporary impact on the system; and its recommendations could not be implemented on a satisfactory level. During the 1950s and the 1960s, a number of seminars and conferences were organized and working groups were set up with the objective to bring qualitative improvement in teacher education system. In 1954, an international team of experts had been appointed by the Government of India in collaboration with Ford Foundation to study, in greater details, the recommendations of Secondary Education Commission regarding the recruitment, selection and training of teachers and the structure and content of curricula in secondary schools. The team, after its extensive visits to institutions in UK, USA, Denmark and India made the following recommendations concerning the B.Ed. course:

i. The course should be so designed as to adequately prepare students for the assignment of teaching.

ii. The training institutions should not advocate impracticable and unrealistic methods and techniques of teaching.

iii. There should be the system of block practice with adequate provision of supervision and guidance for continuity in practice teaching.

iv. The training institutions should be encouraged to organize and conduct demonstration laboratory schools for conducting experimentation in curriculum constructions and trying out innovative methods of teaching.

v. Besides the classroom teaching, other activities should also form integral component of practical training to student teachers.

One of the important landmarks in the history of Indian efforts towards bringing qualitative improvement in education is the report of the Education Commission (1964-66), popularly known as Kothari Commission, which comprehensively dealt with all stages of education, from pre-primary to higher level, including the vocational and technical education. Regarding teacher education, the Commission stated, "The essence of programme of teacher education is quality and in its absence, teacher education becomes not only a financial waste but a source of overall deterioration in educational standards" (4.13; p.72). Accepting that the existing teacher

education programmes are largely divorced from the realities of schools, it recommended re-orientation of subject knowledge; vitalization of professional studies; and to root the entire curriculum in Indian conditions development of special courses and programmes and revision and improvement of curricula. The Commission stressed that the "prospective teachers need courses which will help them to build up a proper perspective of life, of our cultural heritage and of problems and aspirations of the nation as well as of human culture, and civilization in general" (4.29; p.75). It also emphasized the need for teacher education to be brought into the mainstream academic life of universities (4-04, p.68) and relate the curriculum closely to the teacher's responsibilities and to Indian conditions, problems and studies (4.31; p.75).

The National Commission on Teachers-1 (1983-85) also recommended widespread reform not only in the infrastructure but also in the duration of training and curriculum. While it suggested quality improvement in existing one year B.Ed. courses by 'revamping the current courses and curricula' (p.49, ch. VIII), it also emphasized the need for longer duration of teacher preparation programmes, both at the secondary and elementary levels. It recommended four-year integrated course for both the levels with the provision to extend the duration of secondary level teacher education programme to five years in future to match it after the models of professional courses in medicine, engineering, law, etc. The Commission stressed skill based approach for professional preparation of teachers at elementary level and noted that 'pedagogy should be confined to giving the pupil teacher a broad perspective on education and helping him to relate these principles to school practices' (7.46, p.55). Highlighting the unrelatedness of present theoretical discourses it noted that 'a great deal of deadwood in educational courses needs to be cut down saving time for the acquisition of practical skills' (7.47, p.55).

At the secondary level, the courses of study suggested by the Commission include 'General Education' consisting of study of languages, and study of three or four disciplines from among subjects taught in school, and 'professional preparation' including study of education as a discipline, practice of teaching or internship in school and learning other practical skills such as blackboard writing, drawing, improvising aids to learning, using technology, organising co-curricular activities, etc. Expressing concern over the isolation of colleges of education and schools, it suggested internship of longer duration, that is, three to four weeks in the third and fourth year respectively for integrated courses and six weeks for one-year B.Ed. course, while for the elementary level, the duration of internship was suggested for at least 6-8 weeks in the first year and 12 weeks in the second.

National Commission on Teachers – I (1983-85)

Major recommendations of the National Commission on Teachers–I (1983-85) relating to teacher education curricula are :

- The training curriculum for both secondary and elementary teachers should consist of two components: General education and Professional preparation including practice of teaching and its content-cum-methodology and learning a variety of skills related to the role of a teacher including educational technology and preparation of teaching aids etc.
- Duration of the internship should be of at least four weeks in the third year, and three weeks in the fourth year of study. It should not be confined to classroom teaching only but participation in co-curricular activities such as games, sports, music, dance, drama, etc. should also be obligatory.
- The teacher education institutions must evolve tools for evaluation of pupil teacher performance. It should be comprehensive enough to take into account such factors as trainee's attitude towards work, affection for children, scientific outlook, etc. Self-assessment, pre-lesson and post-lesson discussion should be encouraged.

Expressing the need for revamping the existing M.Ed. courses for greater specialization, the Commission recommended specialized courses for preparation of teacher educators, curriculum consultants for the SCERTs, Science Institutes and State Boards of Education and school inspectors, supervisors and educational administrators.

The concern for quality in teacher education has been well articulated by all Commissions and Committees since independence and the National Policy on Education (1986) could not remain untouched by this. The NPE recommended 'complete overhauling' of the system as a pre-requisite to bring quality improvement and suggested new programmes of teacher education which emphasised continuing education for teachers.

The Acharya Ramamurti Committee (1990) in its review of the NPE 1986 observed that an internship model for teacher training should be adopted because "the internship model is firmly based on the primary value of actual field experience in a realistic situation, on the development of teaching skills by practice over a period of time".

Subsequently, the Yashpal Committee (1993) appointed to analyse the academic burden on students and unsatisfactory quality of learning also expressed concern over the poor quality of teacher preparation programmes in the country which leads to unsatisfactory quality of learning in schools. This Committee also suggested restructuring of the course

content of teacher education programmes to ensure its relevance to the changing needs of school education, longer duration of training, emphasis on self-learning and independent thinking and making the whole teacher education programme more practicum-oriented (p. 26-27).

The recommendations of various Commissions, Committees and policy statements bear testimony to the continuing churning of ideas aimed at revealing qualitative improvement in teacher education system along with quantitative expansion of the facilities. Efforts have been made to make teacher education curricula responsive to the needs of the emerging society and break the isolation of teacher education institutions. It has also been strongly felt time and again that one year duration is not sufficient for equipping the prospective teachers with adequate content and pedagogical skills required by a teacher.

3. Teacher Education Curriculum Frameworks

The first comprehensive attempt for the development of Teacher Education Curriculum Framework was made in 1978 with the publication "Teacher Education Curriculum: A Framework' by the National Council for Teacher Education (NCTE), a non-statutory body located in the National Council of Educational Research and Training (NCERT). This was in response to the 'Curriculum Frameworks' brought out by the NCERT for the ten-year school and higher secondary education in 1975 and 1976 respectively.

The suggestions put forth by the Education Commission were addressed and translated into workable scheme of courses in the Curriculum Framework for teacher education, which suggested two broad models of curriculum, one for pre-primary to secondary education and the other, for senior/higher secondary education, having three components – Pedagogical theory, Working with the community; and Content-cum-methodology of school subjects and practice teaching.

Tables 1 to 5 describe the details of content suggested by the Framework for different stages along with their relative weightage.

Table 1 : Structure of Pre-school Teacher Education Programme (Course with Weightage)

Area	Weightage	Four-semester professional education courses after class X (10+2; 72 credit hours)	Six-semester courses after class X (10+2+1; 108 credit hours)	Four-semester vocational education courses after class X (10+2; 72 credit hours)	Four-semester course in education as a discipline (10+2; 72 credit hours)
1		2	3	4	5
A. Pedagogical Theory	20 %	1. Teacher and Education in the Emerging Indian Society 2. Child Development 3. Special courses according to the needs & facilities available	A. Same as in Column (2)	A. 25 % Language General Studies (Social, economic, scientific, etc.)	A. 25 % Language General Studies (Social, economic, scientific, etc.)
B. Working with the Community	20 %	4. Work situation related to 1,6, and 8	B. Same as in Column (2)	B. 25 % Science, social science, and humanities courses designed to . understand the basis and scope of education as vocation	B. 25 % Science, social science, and humanities including literature and education. (Education and related subjects e.g. , psychology, sociology and philosophy should have a weightage of at least 25 %.) (A variety of combinations of academic and education courses are possible in terms of major and minor)

(Contd....)

C. Methodology and Practice Teaching including Related Practical Work	60 %	5. Core Training Programme Package (10 %) 6. Special Training Programme Package I: Child Care (10 %) 7. Special Training Programme Package II: Activity Method (10 %) 8. Special Training Programme Package II: Art, Music and Work Experience (20 %) 9. Related Practical work (10 %) (Modified conventional course)	C. Same as in Column (2) D. 72 Credit-hour courses recommended for academic streams at the +2 level (Courses A, B & C comprise of 36 credit-hours)	C. 50 % Vocational and practical work (Pedagogy and Practice Teaching)	

Source: Teacher Education Curriculum – A Framework, (1978) page 21-22. NCERT.

Table 2: Structure of Primary Teacher Education Programme (Course with Weightages)

Area	Four-semester professional education courses after class X (10+2; 72 credit hours)	Six-semester courses after class X (10+2+1; 108 credit hours)	Four-semester vocational education courses after class X (10+2; 72 credit hours)	Four-semester course in education as a discipline (10+2; 72 credit hours)	Two-semester professional programme after graduation (Graduation in Science or humanities+1; 36 credit hours)
1	2	3	4	5	6
A. Pedagogical Theory	1. Teacher and Education in the Emerging Indian Society 2. Child Development 3. Special courses according to the needs & facilities available	A. Same as in Column (2)	A. 25 % Language General Studies (Social, economic, scientific, etc.)	A. 25 % As in Column (4)	A. 20 % As in Column (2)
B. Working with the Community	4. Work situation related to 1,8,9,10 and 11	B. Same as in Column (2)	B. 25 % Science, Social science, and humanities courses designed to understand the basis and scope of education as a vocation	B. 75 % Science, social science and humanities, including literature and education. (Education and related subjects, e.g., psychology, sociology and	B. 20 % As in Column (2)

(Contd....)

				philosophy should have weightage of at least 25 %	
C. Content-cum Methodology and Practice Teaching including Related Practical Work 60%	5. Core Training Programme Package (10 %) 6. Special Training Programme Package I: Child Care (10 %) 7. Package II: Mathematics (5 %) 8. Package III: Environmental studies I (5 %) 9. Package IV: Environmental studies II (5 %) 10. Package V: Work Experience and Art (10 %) 11. Package VI: Health, Physical Education and Recreational Activities (5 %) 12. Related Practical Work (10 %) (Modified conventional type)	C. Same as in Column (2)	C. 50 % Vocational and practical work (Pedagogy and practice teaching)	(A variety of combinations of academic and educational courses are possible in term of major and minor)	5. Core Training Programme Package (10 %) 6. Special Training Programme Package for either items 6, 8, 10, 11 & 12 or items 7,9,10,11,and 12 as given in Column (2) (50 %)

(Contd....)

		D. 72 Credit-hour courses recommended for academic streams at the +2 level (Courses A, B & C comprise of 36 credit hours)			

Source: Teacher Education Curriculum – A Framework (1978) page 25-26. NCERT

Table 3 : Structure of Secondary Teacher Education Programme (Two-semester course of 36 credit hours)

Area	Weightage	Suggested Course
A. Pedagogical Theory	20 %	1. Teacher and Education in the Emerging Indian Society 2. Educational Psychology 3. Special courses according to the needs and facilities available. 4. Work situations related to 1,6,7,8 and 9.
B. Working with the Community	20 %	5. Core Training Programme Package (10 %)
C. Content-cum-Methodology and Practice Teaching, including Related Practical Work	60 %	6. Special Training Programme Package I: Life Science/Physical Sciences/Social Science/Languages/Mathematics (20 %) 7. Special Training Programme Package II: Work Experience (10 %) 8. Special Training Programme Package III: Health, Physical, Education, Games and Recreational Activities (10 %) 9. Related Practical work (10 %).

Source: Teacher Education Curriculum – A Framework (1978) page 28. NCERT.

Table 4: Structure of the Teacher Education Programme for the Higher Secondary and Collegiate Stages (Course with Weightages)

Area	Weightage	For the +2 stage Academic Stream (*)	For the +2 stage Vocational Stream (*)	For skilled artisans Vocational Stream (*)	For Collegiate education (*)
1	2	3	4	5	6
A. Pedagogical Theory	30 %	1. Teacher and Education in the Emerging Indian Society 2. Educational Psychology 3. Psychology of Adolescence 4. Special courses as per the needs and facilities available	A. As given in Column (3)	A. As given in Column (3), except No. 4	A. 1. Teacher and Education in the Emerging Indian Society 2. Educational Psychology 3. Study of the Indian Youth in Psychological and Sociological Perspectives
B. Working with the Community	20 %	5. Work situations related to 1 and 8	B. As given in Column (3)	B. No Need	B. No Need
C. Content-cum-Methodology and Practice Teaching, including Related Practical Work	50 %	6. Core Training rogramme Package (10 %)	C. As given in Column (3)	C. As given in Column (3)	C. As given in Column (3)

(Contd....)

		7. Special Training Programme Package I: Special Subject (20%) 8. Special Training Programme Package II (Inclusive of Content): Any one Or Special Secondary Training Programme Package I or II (10 %) 9. Related Practical work (10 %)	7. Special Training Programme Package II: Main vocation (20 %) 8. Special Secondary Training Programme Package III (10 %) 9. Related Practical work (10 %)	7. As given in Column (3) for one vocation only 8. No Need 9. No Need	7. As given in Column (3) 8. No Need 9. No Need

* Two-semester courses of 36 credit hours for the +2 stage of academic and vocational stream
* One semester course of 18 credit hours for the skilled artisans and collegiate stream

Source: Teacher Education Curriculum – A Framework (1978) page 30-31. NCERT.

Table 5: Structures of the Post-graduate Studies in Education (Course with Weightages)

Area	M.Ed.	M.Phil
A. Pedagogy Theory	1. Foundations courses (20%)	1. Not needed for those having M.Ed./ M.A. (Ed.). But needed for those from other disciplines.
	2. Research courses (20%)	2. Research courses (50%)
	3. Theoretical courses (60%) or	3. Theoretical courses in one area of specialisation (50%)
B. Specialisation	4. Task-orientated courses. Any two areas of specialisation (60%)	

Source: Teacher Education Curriculum – A Framework (1978) page 33. NCERT.

Major Recommendations of Teacher Education Curriculum Framework (1978) :

- Relevance of the Curriculum to the personal and social needs of children and schools; as well as aspirations of people and ideology of the nation.
- Flexibility within the framework of acceptable national goals and values. The framework suggested that 'flexibility is urgently required not only to break the barriers between the stage-wise teacher education programmes but also between different disciplines'. Flexibility for relevance, mobility and continuing education was emphasized.
- Interdisciplinary and integrated approach in teacher education curriculum should be so designed that integration among theory courses takes place, and this integrated pedagogical understanding flows into the skill-dominated areas of methodology of teaching various subjects as well as into the attitude-building areas of work experience, health, physical and recreational education, along with social service.
- Task-oriented teacher education. Teacher education must be treated as an "exercise of training a teacher for handling a variety of tasks inside and outside the classroom."
- Reform in practice teaching. The framework suggested that student teachers should be put through a series of simulating, microteaching situations before being pushed into actual classrooms.
- Semester system was suggested to replace the year-wise course.
- Evaluation system to be made more reliable and valid.
- Promotion of research and experimentation in teacher education institutions (pp. 4-12).

The Curriculum Framework (1978) made a substantial departure from the existing models in two ways – one, for the first time, it separately visualized curriculum structure for different stages of education, and secondly, it advocated semester system in place of the annual system. It assigned 20 per cent weightage each to pedagogical theory and working with the community and 60 per cent weightage to content-cum-methodology area consisting of practice teaching and related practical work.

The framework recommended an explicit task-oriented approach, by exposing teacher trainees to the complex socio-economic problems through actual work situations in society so as to validate and reinforce

theoretical learning by actual life experiences. The need to address the rural urban context and different stages of child development was high on the agenda of the framework, as it suggested various core and special courses to address the context-specific and stage-specific requirements through teacher education programmes. Accordingly, it suggested certain core skills indispensable for all types of teachers, like identification of the behaviour underlying conceptual learning, blackboard writing, oral expression, preparation of instructional material and use of some common audio-visual aids and so on..... and specific skills necessary for teaching different subjects at different age levels. On the lines of Kothari Education Commission, the Framework (1978) emphasised pre-practice teaching activities including simulated teaching and model lessons delivered by teacher educators, actual teaching through block teaching approach instead of delivering one lesson per day and post-teaching follow up by taking up related practical work in evaluation, etc. Therefore, the duration of practice teaching was considerably increased.

A significant feature of the framework is the conceptualisation of courses like Teacher and Education in Emerging Indian Society replacing philosophical and sociological foundations of education and the space provided for core training and skill developing programme.

The thrust areas relating to the content and process of school education visualized by NPE (1986) provided the conceptual framework for formulation of the curriculum framework for teacher education of 1988. This framework consolidated developments that had taken place in preceding year and emphasized the need to accommodate in teacher education curricula the explosion in knowledge and technology. The changing role of teacher had been strongly emphasized in this framework: "The future teacher will be a competent professional and a skilled teacher as always has been expected, but this will now mean that he will also need to be an effective communicator, a designer and user of learning resources, a learning facilitator and active participant in community life" (p. II.26). Horizontal and vertical mobility had also been suggested to break the isolation of different stages of teacher education programmes. The framework attempted to address the thrust areas articulated in the National Curriculum Framework for Elementary and Secondary School Education brought out by the NCERT in 1988, emphasising learner-centered approach and reorientation of the process of education by using interactive style of teaching, prominence to non-scholastic areas, etc. The need for having a balance between theory and practice is manifested in the framework. "The curriculum should emphasise integration of theoretical understandings with their practical application without overdoing one over the other" (p. IV.2). Central place to practicum or field work with appropriate weightage was suggested by the Framework. The course content, therefore, included:

a) ***Foundation Courses***, emphasising mainly the philosophical and

social perspectives and psychological bases of education at the stage concerned;

b) ***Stage-relevant Specialisations***, emphasising understanding of the professional functions of the teacher in a general way relevant to the stage and competencies and skills of teaching relevant to school subjects.

c) ***Field Work or Practicum***, emphasising application of theory in classroom teaching and in the practical activities involving students, parents and the community.

The course structure for various stages of teacher education is given in Tables 6-8.

The next significant attempt was the Curriculum Framework for Quality Teacher Education (1998) that attempted to address and reflect on the changing international scenario as a result of globalization, privatisation, communication technology, etc. The framework further attempted to strike a balance between the international demands and realities of the national life. In a major departure from earlier frameworks, it accepted commitment, competence and performance as the guiding principles for the development of curricula and programmes for teacher preparation. Responsiveness to the community needs, culture-specificity in pedagogy and preparing teachers, as life-long learners, had been specially emphasised in the framework. The framework provided separate course structures for primary and elementary levels and Academic and Vocational streams of senior secondary teacher education. Besides, the framework covered the curriculum for preparation of teachers of alternative systems and for students with special needs and physical education. It also provided space for in-service education and education of teacher educators. It is significant to note that the framework reconceptualised the core courses in teacher education curricula as given in Tables 9 to 12.

The relative weightage to theory and practice teaching, given in these three major efforts to bring qualitative improvement in the teacher education curriculum of the country, is presented in Table 13.

Table 6: Teacher Education Programme for Primary and Upper Primary (Elementary) Stage

Duration: 2 years after Higher Secondary

Curriculum Components	Weightage in terms of time
A. Foundation Course	***20%***
i. Education in Emerging India (Philosophical and Socio-cultural perspectives)	10%
ii. Educational Psychology (with focus on learner development and stages, learning, adjustment)	10%
B. Stage Relevant Specialisation	***30%***
iii. Elementary Education and Teacher Functions	10%
Specialisation in methodology of:	
iv. A Elementary school subject with prior specialisation	10%
v. A second school subject/Primary Education/ Upper Primary Education	10%
C. Additional Specialisation	***10%***
vi. An elective from areas like Adult Education, Population Education, Distance Education, Library Services, Tribal Education, Special Education (Integrated and one category) Health & Physical Education, Art Education, Educational Technology, Action Research, Computer Education, etc.	10%
D. Practicum/Field Work	40%
vii. Internship in Teaching including field assignments	20%
viii. Practical work including working with community and social service	20%

Table 7: Teacher Education Programme for Secondary Stage

Duration: one year after graduation

Curriculum Components	Weightage in terms of time
A. Foundation Course	***20%***
i. Education in Emerging India (Philosophical and Socio-cultural perspectives)	10%
ii. Educational Psychology (with focus on learner development and stages, learning, adjustment)	10%
B. Stage Relevant Specialisation	***30%***
iii. Secondary Education and Teacher Functions	10%
Specialisation in methodology of:	
iv. A Secondary school subject with prior specialisation	10%
v. A second Secondary school subject/Higher Secondary Education/Secondary Education.	10%
C. Additional Specialisation	***10%***
vi. An elective from areas like Adult Education, Population Education, Distance Education, Library Services, Tribal Education, Special Education (Integrated and one category) Health & Physical Education, Art Education, Educational Technology, Action Research, Computer Education, etc.	10%
D. Practicum/Field Work	***40%***
vii. Internship in Teaching including field assignments	20%
viii. Practical work including working with community and social service	20%

Table 8 : Teacher Education Programme for Higher Secondary Stage

Duration: one year after Master's degree

Curriculum Components	Weightage in terms of time
A. ***Foundation Course***	***20%***
i. Education in Emerging India (with specific reference to Higher Education)	10%
ii. Educational Psychology (with special emphasis on adolescence, learning, adjustment and personality)	10%
B. ***Stage Relevant Specialisation***	***30%***
iii. Higher Secondary Education and Teacher Functions	10%
iv. Communication Technology and Media Resource	10%
v. Curriculum Transaction Strategies (one subject related to +2 stage)	10%
C. ***Additional Specialisation***	***10%***
vi. One from among Curriculum Development Instructional Strategies and Designs, Evaluation, Educational and Vocational Guidance, Education of the Gifted, Institutional Planning and Management, etc.	10%
D. ***Practicum/Field Work***	***40%***
vii. Practical work	20%
viii. Internship Teaching (at the +2 Stage)	20 %

Table 9 : Teacher Education Curriculum Framework (1998)
Teacher Education for Early Childhood Stage

Curriculum Framework	Practical work
Theory	
• Emerging Indian Society	• Drawing and Painting
• Early Childhood Education: Scope, Nature, Status, Problems and Issues	• Music
• Psychology of the Child Learning during early years (implanting developmentally appropriate curriculum)	• Creative activities
• Planning, management and administration of Early Childhood Care and Education (ECCE) programmes	• Story telling
• Methods and materials for facilitating the growth and development of pre-school child through activities for:	• Dance and Drama • Games and Physical activities
- Physical development - Mental development - Emotional development - Aesthetics development - Language development - Social development - Moral development	• Plays • Field trips • Block making and related games
- Neuro-muscular co-ordination - Self-expression - Health and Hygiene	• Activities for children with special needs.
- Habit formation - Observation - Sensory-motor training	

Practicum: Teaching Placement and internship.
Practical experiences: observation, planning and implementing programmes related to activities for children.

Table 10 : Primary Teacher Education Curriculum Framework

Curriculum Framework	Practice Teaching	Practical work
Theory • Emerging Indian Society • Primary Education in India: status, problems and issues • Psychology of Teaching and Learning with special reference to children of age group 6-11 years • Assessment, Evaluation and Remedial Teaching • Health and Physical Education • School Management • Education of Children with Special Needs • Guidance and Counselling • Content Areas for Primary Schools • Action Research	• Pedagogical Analysis of Primary School Subjects • Practice Teaching in Schools • Observation of Model Lessons	• School Experience inclusive of Internship • Work Education • School-Community Interaction • Action Research Studies (planning and execution) • Organisation of relevant educational activities

Table 11 : Teacher Education for Elementary Stage

Curriculum Framework	Practice Teaching	Practical work
Theory • Emerging Indian Society • Elementary Education in India-status, problems and issues • Psychology of Teaching and Learning with special reference to children of age group 6-14 years • Health and Physical Education • School Management • Education of Children with Special Needs • Assessment, Evaluation and Remedial Teaching • Guidance and Counselling • Action Research	• Pedagogical Analysis of elementary School teaching subjects • Practice Teaching in Schools • Observation of Model Lessons	• School Experience inclusive of Internship • Work Education • School-Community Interaction • Organisation of educational activities • Organisation of games, sports and physical education activities. • Action Research proposals and studies.

Table 12 : Teacher Education for Secondary Stage

Curriculum Framework	Practice Teaching	Practical work
Theory • Emerging Indian Society • Secondary Education in India-status, problems and issues • Psychology of Teaching and Learning • Guidance and Counselling • Assessment, Evaluation and Remedial Teaching • Curriculum Design and Development • School Management • Comparative Education • School Management • Action Research **Optional courses** • Pre-school Education • Elementary Education • Educational Technology • Vocational Education • Adult Education • Non-formal Education • Distance Education • Environmental Education • Computer Education • Education of Children with Special Needs • Health and Physical Education • History and Problems of Education • Population Education	• Pedagogical Analysis of two School teaching subjects • Practice Teaching in Schools • Observation of Model Lessons	• Internship and School Experiences • Field work with Community based programmes • Creativity and personality development programmes • Sessional/practical work • Physical education games, sports and other school activities. • Aesthetics development programmes and activities • Action Research studies.

Table 13: Relative weightage to Theory and Practice in various Curriculum Frameworks

Curriculum Framework (1978)	Curriculum Framework 1988	Curriculum Framework 1998
Primary/Elementary Level		
Area weightage	***Area weightage***	***Area weightage***
1. Pedagogical Theory (20%)	Foundation Courses (20%)	Theory (40%)
2. Working with Community (20%)	Stage Relevant Specialization (30%)	Practice Teaching
3. Content-cum-Methodology and practice teaching including related practical work (60%)	Additional Specialization (10%)	Practical Work (2+3=60%)
4.	Practicum and Fieldwork (40%)	
Secondary Level		
1. Pedagogical theory (20%)	Foundation Courses (20%)	Theory including 40% optional courses
2. Working with the Community (20%)	Stage Relevant Specialization (30%)	Practice Teaching (40%)
3. Content-cum-Methodology, and Practice Teaching including related practical work (60%)	Additional Specialization (10%)	Practical Work (20%)
4.	Practicum and Fieldwork (40%)	
Senior Secondary Level		
1. Pedagogical Theory (30%)	Foundation Courses (20%)	Theory including optional courses (40%)
2. Working with the Community (20%)	Stage Relevant Specialisation (20%)	Practice Teaching
3. Content-cum-methodology and Practice Teaching including related practical Work (50%)	Additional Specialisation (20%)	Practical Work (2+3 =60%)
	Practicum/Field Work (40%)	

A comparison of the three Frameworks discussed reveals shifts in emphasis over a period of time. While the 1978 teacher education curriculum framework stressed an explicit task-oriented approach, working with community as an area of curriculum and reduction of theoretical component from teacher education curriculum, the 1988 framework emphasized the need to incorporate and accommodate the technological know-how and indicated towards the changing role of teacher as an effective communicator, a designer and user of learning resources, a learning facilitator and an active participant in community life. The 1998 framework tried to provide a futuristic, dynamic and forward looking perspective in teacher education curriculum while advocating the use of culture specific pegagogies and enhancement of cultural component in curriculum.

The field experiences of existing teacher education programmes of the country reveal, that, in spite of three curriculum frameworks and recommendation of National Policy on Education (1986) for complete overhauling of teacher education programmes (9.4; p. 44), the teacher education system of the country is still craving for the long awaited restructuring. Though there have been widespread efforts to modify teacher education curriculum of the country over the years, the fact remains that only cosmetic changes were made and majority of teacher education programmes remained satisfied with providing a "chef's salad" of information about various concepts to prospective teachers, including the latest arrivals in India like human rights education, education for sustainable development, peace education, culture specific pedagogy etc. Way back in 1985, an important document, 'The Challenge of Education' which preceded the NPE (1986) stated: "We are on the threshold of development of new technologies likely to revolutionize teaching in classroom. But the process of updating the curricula of teacher education has been very slow. Much of the teacher education is irrelevant even to contemporary requirements, leave alone those of the future. We, therefore, face a paradox of having better books and research but progressively more indifferent teachers" (p. 54).

The situation has not changed much even today. The changes suggested by these curriculum frameworks have not been fully implemented at the ground level. The influence of 1978 framework could be seen in the curriculum of teacher education at the field level as many universities and state level agencies incorporated curricular areas recommended by it in their syllabi.

The 1988 framework led to the development of model syllabi for the Elementary and Secondary teacher education programmes. The elementary teacher education syllabi were implemented in DIETs all over the country with some modifications. Except for some instances, the seeds of 1998 framework are yet to germinate. The only visible change this framework brought was the introduction of two-year secondary teacher education programme on a pilot basis at the Regional Institutes of

Education of NCERT and the Gujarat Vidyapeeth. Beyond this, no significant change is visible in the teacher education curricula. We have yet to evolve our own context specific content and pedagogy. Consequently, the whole teacher education curricula is heavily loaded with western psychological, philosophical and sociological theories and information which have become outdated and discarded even by the western countries. For example, Pavlov, Thorndike, Skinner, Gagne, Tyler, etc. still continue to dominate the B.Ed. and M.Ed. programmes of major universities of the country. Even the Model Curriculum (2001) developed by the UGC on the eve of twentyfirst century had very little new ideas to offer .This model curriculum banks mainly on the four major traditional schools of philosophy – idealism, naturalism, pragmatism and realism – that continued to dominate the teacher education curricula ever since the 1978 framework though more concentrated efforts than before were made at least to indigenise teacher education curricula with attention on Indian philosophers and educationists.

The advent of 21st century saw a renewed attempt to modify teacher education curricula to the needs of contemporary society. The Model Curriculum of UGC (2001), approach papers of NCTE (2003) and Curriculum Frameworks of Teacher Education of NCERT (2004) and (2006) respectively tried to address the contemporary concerns. The two approach papers circulated by NCTE in 2003 dealing with elementary and secondary teacher education outlined a teacher education curriculum comprising general education courses, pedagogical courses, school experience programmes, and practical work and post-course work internship. At the secondary level, the paper visualised the curricular components covering theory courses – contemporary and emerging Indian society, teaching learning process, evaluation, curriculum development and action research, pedagogical courses, optional courses, practice teaching, co-curricular activities, practicum and post-course work internship. These papers though reflect the path sketch for the development of professionalism in teacher education programmes, yet they could not get translated into course details.

Again an attempt was made in 2006 by the NCTE in collaboration with the NCERT to update the teacher education system in the light of National Curriculum Framework for School Education (2005). Its consonance with the NCF (2005) was ensured with a view to facilitating smooth trajectory for translation of the vision of NCF (2005). At the very onset, it had clarified that, "the NCF subscribes to a view of learner as an active participant in the process of learning and knowledge as social construction. The teacher education curriculum framework will need to engage with questions of the learner (in this case, the teacher), the learning process and the content and pedagogy of educating teachers (p. 9)."

The framework focuses on preparation of reflective teachers through the process of weaving theoretical knowledge across disciplines with student teachers' own experiential realities and the learners' social milieu. It tries to help teachers to develop a conducive learning environment for

addressing the needs of learners. In a major departure from earlier frameworks, the components of curriculum include childhood, child development and learning, teacher and learner in society, aims of educating children and adults, knowledge and curriculum, developing self and one's aspirations as teachers, human rights and rights of the child, adolescence education and environmental education, teacher-child engagement, learning to integrate ideas, experience and professional skills, learning to assess and evaluate and establishing teacher learning centres. It also visualised continuous reflective engagement of student teachers by connecting knowledge with their own experiential realities. Internship of longer duration has been envisioned in this framework to help student teachers to choose, design, organise and conduct meaningful classroom activities, critically reflect upon their own practices through observations, record keeping and analysis and develop strategies for evaluating children's learning for feedback into curriculum and pedagogic practices.

The draft framework also suggested alternative models of pre-service teacher education, such as one-year B.Ed. followed by long duration (5-6 months) school attachment programme, four-year interdisciplinary pre-service teacher education programme for different stages of school education and a five-year integrated undergraduate and post-graduate programme.

The latest effort to modify teacher education curricula to meet contemporary requirements has been initiated by the NCERT in the context of the recommendation of the committee appointed by it to review teacher education programmes offered in RIEs (Govinda Committee). The committee highlighted the interdisciplinary nature of education and recommended that, "a systematic exercise needs to be undertaken to identify fundamental concepts, which can be drawn from cognate disciplines, with a view to: a) highlighting connectivity among these concepts linked to teaching-learning processes and practices; and b) focusing on distinct nature of 'education' as an area of study with its emerging and evolving interdisciplinary knowledge base and its epistemology (p. 33)." Teacher education curricula should, therefore, allow space to the teachers to introspect, reflect on their own practices and become agents of change.

4. Teacher Education System: A Critique and Future Directions

The review of teacher education curricula in the country reflects that the teacher education curriculum reforms in India have a weakness to get influenced by the models of developed countries instead of evolving its own indigenous strategy or model. Consequently, we find the teacher education curriculum reforms drifting from classroom transaction analysis to micro-teaching, simulated teaching and models of teaching and even the most recent the constructivist approach to learning, etc. A number of themes and concepts, which have long become outdated in developed

countries are often imported by us and treated as innovative. In a country where a majority of teachers have to handle a class with more than fifty students, blind imitation and practice of western model of teaching may not be an effective technique. The divorce between the classroom realities a teacher has to face and the teacher education programmes he/she receives also finds an expression in the World Bank Report (1997): "in India teachers need but do not receive preparation for teaching in the situation that two-thirds of them have to face: multigrade classrooms with many first generation learners who attend school irregularly". Similar concerns have been expressed by Raina (1999): "teacher training programmes in India have remained procrustean, offering the same menu to all without slightest regard for varying cultural and physical settings. They remained unresponsive to vast cultural, linguistic, regional and geographical diversity". It is high time that various contexts in which teachers have to engage students of different stages find adequate space in the teacher education curriculum.

Similarly, our student teachers are often more familiar and conversant with the philosophies of Dewey, Rousseau, Plato, Froebel and the four ideologies, i.e., idealism, naturalism, realism and pragmatism than with the philosophy of Indian thinkers. Student teachers often fumble to describe the educational thoughts of Gandhi, Sri Aurobindo, Tagore or Krishnamurti while Plato and Rousseau are easily remembered. Gandhian philosophy and his Wardha Scheme for basic education became outdated even before it had taken off properly. Shotton (1997) explains, "My initial entry point to Indian education was via Tagore, Sri Aurobindo and Krishnamurti, and it has always been a mystery to me how three of the more innovative educational thinkers of the world have vanished into virtual obscurity in India, but quite positively it is their absence from serious discussion in India that leads many to conclude that there is not a progressive discourse about education in India" (p. 63). This misconception needs to be addressed through the teacher education curriculum.

However, unfortunately the concern for change remains limited to discourses on ideational level and very little gets translated into practice. Consequently, even the UGC Model Curriculum (2001) fails to provide new directions to teacher education programmes of the B.Ed. and M.Ed. levels and continues to prescribe traditional approach of psychological, philosophical and sociological basis of education instead of focusing on the approach of how the knowledge of these cognate disciplines can be related to understanding how children grow and learn. Hence, though teachers may be aware of the basic principle, they often fail to utilise it to the benefit of the child.

Education is interdisciplinary in nature and, therefore, the curriculum should focus on the ideas derived from various cognate disciplines viz., philosophy, sociology, psychology, etc viewed in the perspective of education and facilitate transition from theory to practice. The existing curriculum, however, fails miserably to bring to the surface the applied

aspect of various philosophical, sociological and psychological ideas and hence, the whole teacher education programme remains theoretical and divorced from the grassroot realities of classrooms. The teacher education curriculum, therefore, needs to develop an understanding among the students about education as an independent discipline in itself and its interlinkages with various related disciplines.

The learners today need considerable freedom to explore, enquire and investigate. This means that teacher education curricula should give enough space to student teachers to develop logical reasoning, critical thinking, problem solving and meaning making. However, the orientation provided in teacher education institutions through foundation courses is often too theoretical and provides only unrelated and fragmented knowledge to teachers. It fails to develop a deeper understanding in student teachers about the learners, their socio-cultural environment, their developmental stages, physical and psychological changes they are undergoing and influence their learning styles. Therefore, considerable diversity is needed in content and pedagogy.

Developing reflectivity in teachers acquires all the more significance because of increasing racial, ethical, cultural and linguistic diversities in schools and in society which demands reflective and broad-minded citizens. The available empirical evidence suggests that teachers' own beliefs play a major role in how they respond to the diversity in classroom situations. Teacher education curriculum, therefore, needs to be planned and organized to develop the spirit of inquiry, initiative, scientific temper, conceptual clarity and linguistic skills through rigorous practice teaching and/or internship which has so far remained a neglected area of teacher preparation.

During recent years there has been an emerging epistemology of pedagogy, i.e., learning does not involve discovering the reality, but constructing the reality. Knowledge and cognitions are to be constructed and effects are to be felt. Learning is no more passive absorption of knowledge and ideas but the construction of ideas developed on one's personal experiences. Emphasis has now shifted towards constructivist approach of learning. Learning is also perceived as an integral part of learner's physical, social and cultural contexts. This concept has come to be known as 'situated cognition' and is a major thrust area of the National Curriculum Framework (2005). The whole pedagogical approach of teacher education programmes, therefore, needs to be reoriented from traditional behaviourist to constructivist discourses.

However, the experience shows that a fragmented approach has been adopted for curriculum renewal and modification by different states and institutions instead of a complete overhauling of the system as visualized by the NPE (1986). Consequently, while few institutions have modified their curriculum as per recommendations of the 1998 framework, others still continue with the earlier curriculum frameworks with very little changes here and there in the syllabus.

India is still struggling hard to universalize elementary education. Most of our primary teachers have to deal with first generation learners in their classe. However, the programme of teacher education hardly provides any scope for pre-service teachers to get acquainted with the social realities through interaction with local community which could be an enriching experience for student teachers in terms of understanding the local customs, traditions and values or a visit to slums or areas affected by communal tensions, militancy or terrorism, etc. to see, know and feel how the innocent, the deprived and victims of social injustice grow up and live. Though we have included 'working with the community' as an essential component at the elementary and secondary level teacher preparation programmes, the seriousness with which it should have been carried out by teacher education institutions is mostly lacking, defeating its whole objective.

In spite of the thrust of various curricular reform efforts to evolve stage-specific curricula for school education, there is considerable mismatch in practice. The District Institutes of Education and Training (DIETs), for instance, are expected to provide two years' pre-service teacher education programme to prepare teachers for elementary level. The products of these institutions are eligible for appointment as primary school teachers (PRTs) only. Similarly, the B.Ed. programmes offered by different universities are meant for preparing teachers at the secondary level. But a number of state education departments have prescribed B.Ed. as an alternative eligibility qualification for recruitment of primary teachers leading to a situation where primary children are being taught by teachers who have not been prepared to teach at this stage.

In addition, there is no separate teacher education programme for the preparation of senior secondary teachers. The teachers holding post-graduation with B.Ed. degree are eligible for appointment as senior secondary teachers. Therefore, there is need to seriously address this issue and prepare curricula for pre-primary, primary, elementary, secondary and senior secondary levels separately as the developmental stages of children and their requirements differ requiring different content and pedagogical skills among teachers to teach them.

There is not only isolation of teacher education institutions from mainstream academic life, but also lack of collaborative effort and linkages between various institutions working for the same cause which often results in multiplicity of efforts and contradictions as well and adds to the confusion. For instance, the Kothari Education Commission suggested one-year B.Ed. programme which was accepted by the 1978 NCTE curriculum framework. The Teacher Education Curriculum Framework (1998) of NCTE suggests two-year B.Ed. programme, while the model curriculum developed by the University Grants Commission (UGC, 2001) is for one year duration. The NCERT-NCTE 2006 framework suggests the duration of B.Ed. programme for one and a half year, besides the four-year integrated course and the five-year undergraduate and post-graduate programmes. This leads to

confusion amongst institutions. There is no doubt that professionalism in teacher education necessitates that teachers are subjected to a prolonged period of preparation and exposed to a sizable body of specialised knowledge (Pandey, 1998, p.407) but the duration of that prolonged preparation should be based on some justifiable reason; merely drifting from one year to one and a half or two or even four years will not yield any fruitful result as the suggestion of a two year B.Ed. could not take off. Besides, the duration of teacher training should be uniformly implemented throughout the country.

Therefore, while preparing the curricula of teacher education, one should be reminded by general areas of knowledge, skills and dispositions that are important for any teacher to acquire:

- Knowledge of learners and how they learn and develop within their social context;
- Conception of curriculum contents and goals;
- Understanding of subject matter and skills to be taught in the light of the social purposes of education; and
- Understanding of teaching in the light of content and learners to be taught as informed by assessment and supported by classroom environments.

In essence, the curriculum developers need to explore:

- How children grow and learn, what kind of experiences do they need to develop with confidence and competence they need to succeed in life?
- What kind of knowledge teachers need to facilitate such experiences of child?
- What kinds of experiences do teachers need to have in order to develop such kinds of knowledge?
- What kinds of measures or evidence we use to see if learning is really taking place.

The teacher education curriculum reform, therefore, calls for systematic task analysis of teachers at various levels and inclusion of relevant contents, which alone can infuse confidence among the prospective teachers to negotiate school curriculum in the classroom.

While developing the curriculum of teacher education programmes for different stages, a careful analysis of the developmental stages of a child and necessary skills required in teachers to facilitate optimal development is the prerequisite.

The teacher education curriculum needs to develop an understanding among the students about education as an independent discipline in itself and its interlinkages with various cognate disciplines. Therefore, the applied nature of various disciplines should be the focus of teacher education curricula.

Conscious efforts are required to integrate content and pedagogy in

teacher education curricula at all levels. In addition, multimedia and information and communication technology should also become integral part of teacher preparation programme. There is need to focus on context-specific pedagogy such as multilevel teaching, handling large size classes,handling children with differential abilities, children in different contexts such as tribal children, rural children, slum children, etc.

The existing concept of practice teaching needs to be reformulated and should be replaced by school experience/school attachment programme of longer duration and provision for comprehensive experience of school life to the student teacher parallel to the internship in the medical profession both in terms of richness of experience and rigour of preparation. The NCF (2005) has reiterated the internship model to help teachers to design, organise and conduct meaningful classroom activities, critically reflect upon their own practices and develop strategies for evaluating children's learning for feedback into curriculum and pedagogy (p. 98).

In short, the duration as well as content of teacher education should be carefully planned based on the roles and responsibilities teachers have to perform at different levels. The teachers should be prepared for reflection, critical analysis and logical reasoning.

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Chapter 4

National Curriculum Framework (2005): Implications for Teacher Education

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1. The Beginning

It is often said that in order to understand, appreciate and evaluate the educational system of a nation, it is essential to know something of its history and tradition, of the forces and attitudes governing its social organisation and the political and economic conditions that determine the implications of various factors like culture, economy, geography, philosophy, polity and religion. Of course, scientific and technological developments also contribute to the conceptual framework of education relevant to the needs of the nation.

With the growth of modern economy and the complexity of socio-economic structure, the educational system has grown in its coverage and specialisation. The economy as a consumer of the educational product wields considerable influence on the levels of specialisation and the content of education. The challenges emanating from updating and restructuring of school education, increasing recourse to open learning systems, the pressures to achieve and excel international standards – all have implications for updating educational curricula. They impact, and, in turn, the roles of a teacher, have implications for teacher education as well. It is against this backdrop that this paper has been attempted. It includes:

- a brief visit to the trends in school education in the post-independent India; and
- a look at the recommendations of the National Curriculum Framework (NCF 2005) with a view to understanding the vision of education and its implications for teacher education.

The task entails mapping the developments in a historical and socio-politico perspective. Placing the issues of universalisation of elementary

education, equality, social justice, etc. at the centre stage of an academic discourse makes it an integral part of the exercise. Locating the discussion within the purview of the development of structures and functioning in reality to bring out a holistic picture is deemed necessary. Finally, a journey is undertaken into analysing the role of the teacher and the re-conceptualisation of this role in the light of NCF (2005). The implications for teacher education are discussed within the ambit of the reconceptualised role of the teacher.

2. The Pre-NCF (2005) Discourse

As discussed, the Report of the Education Commission (1964-66) underlines national development as one of the most important concerns of education, and, in fact, visualises it as 'the only instrument of peaceful social change on a grand scale'. The task of developing a corresponding curriculum, which by way of its objectives, content and methodology serves the current and emerging needs of the Indian society is indeed complex. The values envisioned in the Constitution of India point towards the development of a pluralist open society and a state which is secular, democratic and socialist in nature. The school curriculum ought to reflect these aims and values in its structure, content and implied pedagogy, that is, in its entire design. A need was thus felt to meet the requirements of national development. It called for a change in the existing system of school education.

The recommendations of the Expert Committee to develop the curriculum for the ten year school also focussed on the need to develop a curriculum which was socially and personally relevant, yet had the flexibility within a framework of acceptable principles and values and dynamism, in view of the rapidly expanding frontiers of knowledge in science and technology and the changing socio-economic conditions of our society. It focussed on the need to address the dichotomy that existed between work and education. Education, by far, had remained segregated from life and work. The concern for social justice, democratic values and national integration were all spelt out.

On similar lines, the National Curriculum Framework for Elementary and Secondary Education (NCFESE), formulated in 1988, clearly articulates: '...a national system of education based on a common educational structure, a national curricular framework and minimum levels of learning for each stage of education.' The school curriculum and its transaction are expected to give concrete shape to the emerging national system of education. The main focus is on evolving a national system of education which would promote India's unique socio-cultural identity, prepare the country to meet the future challenges and develop the country's human resources enabling them to participate effectively in national development endeavours. This implies the reorientation of the content and processes of education, particularly, at the school stage to make it in

tune with the goals of the emerging national system of education' (NCFESE 1988, p.3).

The curricular concerns laid down in the NCFESE (1988) are also pertinent. 'For our society which is striving to bridge the gap between the haves and the have-nots, the question of equality of educational opportunity assumes a profound importance. The educational deprivation of other needs and to serious undermining of the potential not only for individual development and fulfilment but for national development as well . . . to promote equality, it is necessary to provide equal opportunity to all not only in access, but also in the conditions for success. Education being a powerful instrument for social transformation, the value of equality of opportunity has to be demonstrated both by ensuring that the conditions of learning promote equal chance of success to all'.

The NCF (2005) articulates a set of concerns when it says : "The basic concerns of education – to enable children to make sense of life and to develop their potential, to define and pursue a purpose and recognise the right of others to do the same – stand uncontested and valid even today. If anything, we need to reiterate mutual interdependence of humans, and as Tagore says, we achieve our greatest happiness when we realise ourselves through others. Equally, we need to reaffirm our commitment to the concept of equality, within the landscape of cultural and socio-economic diversity from which children enter into the portals of the school. Individual aspirations in a competitive economy tend to reduce education to becoming an instrument of material success. The perception, which places the individual in exclusively competitive relationships, puts unreasonable stress on children and thus distorts values. It also makes learning from each other a matter of little consequence. Education must be able to promote values which foster peace, humaneness and tolerance in a multi-cultural society".

The NCF (2005) also refers to the problem of the curriculum load as expounded in 'Learning without Burden', a report submitted by the National Advisory Committee to the MHRD in 1993. The NCF states, 'despite the review of the Curriculum Framework' in 2000, the vexed issues of curriculum load and the tyranny of examinations remained unsolved. It focuses on the increase in curriculum load for children which has made learning at school a source of stress for young minds during their formative years of childhood and adolescence. In this connection, the NCF (2005) says:

". . . to make teaching a means of harnessing the child's creative nature, the report recommended a fundamental change in the matter of organising the school curriculum, and also in the system of examination which forces children to memorise information and reproduce it. Learning for the sake of being examined in a mechanical manner takes away the joy of being young and delinks school knowledge from everyday experience" (NCF 2005, p. 2).

This concern seems to provide the central theme of NCF (2005).

What can be appreciated are the idea of harnessing the creativity of a child, attempts to make the school curriculum less dreary and the importance of addressing the problem of curriculum load. The main focus remains on an individual child and his/her knowledge system. The curriculum framework moves away from the 'textbook culture' to 'child-centred education'. 'Child-centred-pedagogy' means giving primacy to children's experiences, their voices and their active participation . . . the learning plan must respond to physical, cultural and social preferences within the wide diversity of characteristics and needs.' This seems to have tremendous implications for teacher education for we would need to train teachers who have the ability to understand the above foci of child-centred education.

The NCF (2005) also lays its focus on the *preparation of multiple textbooks,* including by private publishers. It says, "we must use textbooks as one of the primary instruments for equity, since for a great majority of school-going children as also for their teachers, it is the only accessible and affordable resource for education". However, NCF (2005) does not talk of any *national* level textbooks which can be used/adapted for use in different parts of the country. This appears in contrast to the Education Commission (1964-66) which said, 'Textbooks produced at the national level will have other advantages as well'. One of the major recommendations is that we should attempt to evolve national standards at the end of the primary, secondary and higher secondary stages . . . this would make the teaching in schools in different parts of the country fairly comparable". Thus, what seems to emerge is a need for the initiatives to be contextualised within the larger ambit of national development.

While the NCF (2005) lays a lot of *emphasis on child-centred education,* one is reminded of the reality in schools. It does recognise the importance of a satisfactory teacher pupil ratio (maximum 1:30). But this is seldom present. Then it becomes very difficult for any curriculum framed to cover ordinary schools to demand that teachers give 'individualised attention' as emphasised by the NCF (2005) (2.4.4 19). Given a situation where, in many schools, even an adequate number of classrooms do not exist, and teachers are, in effect, part-time teachers, this kind of prescription tends to become unreal and unpractical. *How would such teachers be trained, is another major question, more so, because the new pedagogy demands low pupil teacher ratio and also professionally motivated and socially committed teachers.* It is very difficult to visualise a teacher teaching 35 periods a week and at the same time reviewing and planning academic activities, consulting peers, experts, books, etc. As said earlier, infrastructure in most schools is not satisfactory. Therefore, transacting the 'new' curriculum would be very very challenging. Teacher education has to take cognizance of these issues during conceptualisation and implementation stages.

It is well understood that the exclusion of the majority of children from the school system and of disparities between government and elite

public schools challenge efforts aimed towards equality. It is also realised that there is a certain trajectory of development that the educational structure is following. Equality of educational opportunity is the least that the state should provide to students from different social and economic backgrounds. The positive discrimination that is part of our Constitutional recommendations has to begin with the primary school level. The NCF (2005) quotes the statements of the Kothari Commission arguing for *common school system*: . . . we urgently need to take steps for realising the goal that Kothari Commission had placed before us by recommending a system of common schools which would serve all children in the neighbourhood irrespective of their social origins and economic backgrounds (NCF 2005, 13).

The NCF (2005) notes that the Kothari Commission had identified exclusion as the cause of the education system itself consolidating and increasing social segregation. So, it proposed a system of common schools which would serve all children in the neighbourhood. The NCF (2005) also argues that quality schools, the so-called private schools, would benefit from the heterogeneous presence of all children.

Even though the NCF (2005) is replete with terms such as equality and social justice, it sometimes tends to become rhetoric. *This is because there is a need to examine the issues in the context of the prevailing school system which itself is founded on the principles of inequality and injustice.* It seems these issues are taken up but not addressed deeply. They appear as platitudes to addressing inequalities of gender, caste and class. They seem to bring out the fact that the assumption is that a policy on education is only a part of a wider social and economic policy making and cannot offer much.

However, since the NCF (2005) does highlight a child-centred education, the child-centred pedagogies face a major challenge in terms of what happens when education has to be provided not to a select group of people but to the whole population for strengthening the democratic ethos. So, this has serious implications on future planning for the discourse on education and inevitably for teacher education. *We all understand that efforts to ensure universal enrolment are not going to be successful unless accompanied by simultaneous efforts to ensure quality infrastructure and processes within the school structure.* The NCF (2005) is rather quiet about this. In fact, the government's policy of introducing multi-track streams of Education Guarantee Centres and multi-grade schools with para teachers itself appears to be a step away from efforts towards meeting the constitutional commitment to provide education of comparable quality to all children. This is also corroborated by a CIE study (2004).

What seems to be required, therefore, is an approach that offers a direction to analysing the existing problems and, therefore, lend a concrete direction to the education policy. Sometimes it appears that the NCF (2005) is offering an 'imaginative', response to 'specific problems' facing the ongoing processes of reforms. It talks of devolving decision-making to

teachers and local bodies, it asserts the necessity of 'broadening the curriculum' now that universalisation of free and compulsory education upto the age of 14 is a legal obligation, but it is silent on the nature of infrastructure required for this, and on how the ongoing reforms would impact the establishment of an equitable and universal system of education. Sometimes it appears to fall between the two extremes - *what is educationally sound is unviable under the current reforms process and the desirable is not what is feasible.* This implies that *mechanisms* would first have to be established for ensuring pedagogical quality and optimum teaching processes for all children in classrooms and school levels. The policy may envisage the government's role to create more vibrant schools, but the institutional structure also needs to be geared upto it.

The NCF (2005) also acknowledges that education can be used passively or insidiously to indoctrinate a 'culture of intolerance and suggests that education should *'empower individuals to choose peace as a way of life'* rather than be 'passive spectators of conflict'. However, what appears to be lacking is a policy of uncompromising commitment to justice and a principled defence of the rights and liberties of those sections of the community who are identified as being discriminated against. What role can teacher education alone play in the absence of such a policy is a serious question.

In the light of the above discussion, what gets re-iterated is that 'education' cannot be considered as an insular space because it is both shaped by change operating upon educational processes and may shape the social, political and economic context. Therefore, learning, in turn, cannot be viewed merely as a technical function of education systems, but will be shaped by social values. Ways in which wider social structures shape opportunities and aspirations are equally important to understand, especially as they would shape the content of learning and deeply influence the attitudes and behaviours of educators and learners. It is also well understood that one cannot engineer social transformation entirely through educational reforms, bypassing completely the political processes.

To summarise, it can be said that if a new curriculum framework focuses on a system aimed at greater access and qualitative improvement of all children, it needs to voice equity-based strategies as well. The issue of equity, in turn, cannot be delinked from the systemic issues of quality and efficiency. This demands conducive developments at policy level, administration and management of education and teacher education to bring about change initiatives. *Thus, the NCF (2005) demands the creation of a new culture of management for teacher education, a new style of analysing and addressing issues and problems.* This is going to be qualitatively very different from the administration and organisation of teacher education as we have known it. Only then the teachers would be able to address the issues within the educational system in a manner which reflects positions' change.

3. Emergence of New Teacher Education Structures

The National Policy on Education (1986) led to the establishment of the District Institutes of Education and Training (DIETs) in different states of India. The DIETs provide training both at pre-service and in-service levels. However, several studies have revealed that the capabilities of these institutions, fall much shorter than the needs of teachers for pre-service and in-service training and the quality of training offered has also much to be desired. The DIETs have not become the pace-setting institutions of excellence that they were envisaged to be. The interest of state governments in these institutes has been quite limited. Nearly all the states had adopted the structure suggested in the guidelines of the scheme with only minor variations, though the guidelines were meant to be indicative, not prescriptive. While the suggested seven branches were set up in the DIETs, only pre-service teacher education and in-service training were actually undertaken. There were many faculty vacancies and only a few states had even framed rules for recruitment. Extreme indifference was visible in the posting of faculty. Most states tended to post secondary school teachers as DIET faculty who had no training or experience in elementary education. The CIE study revealed this way back in 1991. At the same time, the institutes enjoyed little autonomy and remained disconnected from the schools that they were expected to support (DPEP 1999).

Another Centrally Sponsored Scheme, the District Primary Education Programme (DPEP) gave way to the emergence of new management structures at national, state and district levels for programme implementation. These management structures, in the course of events, also acquired the status of resource institutions, rendering somewhat redundant those professional institutions which were created for the purpose of providing on-going resource support to the system, viz., SCERT at the state level and DIET at district level. It was felt that these resource institutions lack, by and large, the capacity to provide resource support to the new curricular and pedagogic concerns which had the potential to change the face of education. Thus, it became clear that the pedagogic and curricular changes introduced even under DPEP presumed no support from the resource institutions. This was because it was not simply an issue of training but the very development of processes for better planning and management.

Under DPEP, the DIETs gave training to teachers even indirectly through Block Resource Centres (BRCs) trainers and Resource Persons (RPs) who, in turn, trained the teachers. In fact, DIETs were turned into nodal agencies for imparting massive Training of Trainers (ToT). These changes also called for renewal of pedagogy which required need-based training programmes. Teaching was thus required to be professionalised. In order to identify training needs, prepare training modules, monitor the training programmes, prepare study materials, etc., the State Resource

Group (SRG) was constituted in the year 1996. Similar resource groups were formed at district level called District Resource Groups (DRGs) and at the block level called Block Resource Groups (BRGs). Training was undertaken on a *cascade* model whereby the SRG trained the DRG and the BRG who, in turn, facilitated the training of teachers at the block level.

Thus, under the DPEP, at the block or sub-district level, the BRCs functioned as resource centres for teachers and trainers and further down at the cluster level there were Cluster Resource Centres (CRCs) serving as centres lending academic support to schools and teachers within their jurisdiction. Usually a DIET faculty member was the academic coordinator of a BRC. Thus, *there existed a hierarchy of functions.*

Several studies have indicated that the BRCs and CRCs, which were envisaged as fora for peer interaction and assessment as well, did not always function like that. The meetings in most centres were mechanical wherein the teachers just stated their problems, with no measures to address them. Sometimes, teachers attended meetings just because they were expected to do so. The trainers and the academic coordinators usually felt a lack of dynamic training programmes for themselves. The BRCs had only limited financial autonomy. Though the CRCs were also envisaged to provide academic support, this was not found to be in reality. The CRC had become just a venue for monthly meetings, and lay dormant for the rest of the month. In other words, this structure has remained more or less ineffective.

It has emerged from the DPEP studies that the BRCs and the CRCs were created in several states, without a parallel investment in capacity building or the development of new processes and remained inactive. Even the SRGs formed in various states, met for highly specific goals such as to conduct teacher training programmes and to formulate textbooks from time to time, but they also have not developed continuous and systematic processes and have no real say in decision making.

4. NCF (2005) vis-à-vis Teacher Education Structures

Now, let us try to *examine the issue of the effectiveness of the functioning of the above mentioned structures and see them in the context of the NCF (2005)* which calls for curriculum and pedagogic changes. These changes are about keeping 'learning' and 'facilitating learning' as the central processes. It is, in other words, calling for a 'bottom up' process, in the sense, the centre of gravity of classroom dynamics shifts away from the teacher to the students. This, however, relates rather uneasily with the 'top-down' logic, which governs the operations of the system of implementing the change initiative. Thus, pedagogic and curricular reform for transforming into learner-centred classroom processes will paradoxically be an attempt to engineer a 'bottom-up' process through a 'top-down' regime.

Seshadri (2000) says, the outstanding development of the decade

(when DPEP began) . . . was the public acknowledgement of quality improvement of teachers through training as an effective national strategy to pursue the Education for All (EFA) objectives. He goes on to describe how 'grand training cascades aimed at teacher skill upgradation were launched in all the DPEP districts'. These 'grand training cascades', however, are designed with the assumption that quality pedagogy is about a set of ideas which can be developed in simulation and what needs to be done is to devise a strategy of reaching these ideas to the teachers with as less 'transmission loss' as possible, so that they may implement these ideas in their classrooms with maximum fidelity. In this model, the teachers are, by and large, looked at as assembly-line workers who merely 'implement' a package of actions conceived of and designed by experts and transmitted to the teachers down a training cascade. *This is the 'factory model'*. This generates enormous alienation and disempowerment that teachers experience in relation to their work and the work context. *Teachers have to be empowered if the NCF (2005) has to become a reality.*

Taking an example as to what happened in the earlier DPEP, the 'factory model' that characterised the first generation strategies of implementing pedagogic changes and influenced not merely the teacher training cascades but also other schemes within DPEP. Seshadri has illustrated the feeling of disempowerment that the teachers experienced even in the context of Teacher Grant Scheme, an initiative within DPEP well conceived and well intended, meant essentially to empower teachers and to enable them to function in a relatively autonomous space. But, the top-down manner in which the scheme was implemented took away whatever possibility the initiative had of creating a sense of ownership and control among teachers (Menon 2003).

The teachers have often expressed ambivalence about the situation they find themselves in. On the one hand, they have considerable resentment about the manner in which they are 'bossed over' by the whole system and, on the other, they feel that they are not receiving enough nurturance from the 'higher-ups'. In fact in the context of BRC, they have voiced their general dissatisfaction regarding the support received from the BRC trainers. The main reasons expressed are : (1) Trainers are not able to demonstrate sufficiently; (2) Trainers adopt advising; (3) Trainers supervise and tend to critique the teachers; (4) Trainers come to find fault (RIE 1999). On the other hand, the teachers also show symptoms of a dependency syndrome. The teacher, many a time, is unable to practice in a reflective manner, and depends on the activities supplied to him/her. The idea that teaching in school is an engagement with the mind of the child and that, if necessary, suitable activities can be generated there and then, is a far cry.

The NCF (2005) is loud enough when it says that *teachers have to become reflective practitioners.* There is nothing amiss in this. In fact, for any sustainable change towards child-centred pedagogic processes in

classrooms (which also is a highlight of NCF 2005), it is imperative that teachers become reflective practitioners. The CRC is one structure in the entire hierarchy of institutions that was created under DPEP that could have provided teachers with the space for collective reflection and sharing, a process that is essential to elevate them from an ascribed and self-perceived picture of an assembly-line worker. Such a forum for peer interaction is essential for building any sense of professionalism. However, as discussed, studies have indicated that in many states there is standardisation of CRC activities by way of their being planned in a centralised manner at the district or the state level, which takes away possibilities of creating in this structure an environment for reflective practice (Menon 2003). Teachers have voiced that the rigid format of the cluster meetings makes them boring.

Thus, viewing issues in the context of NCF (2005), it becomes imperative that the present functioning of the structures, be it DIETs, the BRCs or the CRCs, has to change. For child-centred pedagogy to sustain (as emphasised by NCF 2005), teachers would have to be reflective practitioners, not assembly-line workers. *The continuing 'factory model' of training teachers does not augur well with the strategies used to implement pedagogic and curricular changes.* Thus, the implications for teacher education, in this regard, are tremendous and call for a thorough overhaul of the content and process of teacher education. A new Teacher Education Curriculum Framework needs to address these concerns intimately both in conceptualizing theory and working out practical strategies of teacher preparation.

5. NCF (2005): Implications for the Teacher's Role

5.1 Conventional Education

Education, as understood conventionally, is synonymous to school wherein information is imparted from prescribed textbooks within the four walls of the classroom by a teacher who remains a dispenser of information. Such a system of education is very utilitarian in nature as the 'future' of the child takes a centre stage and the 'present' of the child is excluded. Further, educational practices have not taken into consideration what goes on in the playfield, between the learners and the society and outside the prescribed syllabi as being components of education. Due to this, education has, for long, remained as an isolated activity which does not encourage children to link knowledge with their lives in any organic manner. When such is the definition of education, schools promote a regime of thought that discourages creative thinking and insights. What is presented and transmitted in the name of learning in schools bypasses vital dimensions of the human capacity to create new knowledge.

Within the conventional system of education, learning is enslaved to institutionalised teaching and teachers. For a human-made institutionalised mechanism set up to impart education, the failings of our system of

education are several. It lends several restrictions to the learners because of being highly structured and selective. This kind of a system itself decides what is to be learnt, from whom and in how much time.

That the current system of education is terribly flawed is not a new observation. Sri Aurobindo, J. Krishnamurti, John Holt and Ivan Illyich, among others, have pointed this out extensively and forcefully. However, in spite of its limitations, institutionalised education primarily exists to support itself and to ensure its own continuance, authority and power. Within such a system, the TEACHER is a mere cog of the giant wheel of education.

5.2 Conventional Role of the Teacher

In such a utilitarian and institutionalised system of education, the teacher is a titular head and a mere transactor of information, that, too, in a prescribed manner. When the system of education projects schools as centres for teaching instead of learning, then the teacher is definitely, limiting his role within the periphery of 'teaching'. He/she is expected to 'finish' the prescribed syllabi using readymade textbooks so that he/she can give tests and assignments and conduct examinations as demanded by the system.

Traditionally speaking, the teacher assumes a centre stage position as a source of knowledge, as a custodian and manager of all teaching-learning processes and executor of educational and administrative mandates given through curricula or circulars. Further, the teacher in a conventional set up de-contextualises knowledge and is largely oblivious to the influence of the social environment from where the learner as well as he/she has emerged and the social climate of the classroom and the school. Thus, knowledge withers away without the social, cultural, economic and political context. Since the teacher in such a set up fails to contextualise education, he/she does not display any concerns of contemporary Indian Society and its pluralistic nature through the issues of identity, gender, equity, livelihood and poverty. Thus, the teacher, in the conventional sense, is unresponsive to changes and in his/her own capacity is certainly not the precursor of any significant paradigm shift. As Carr (1995) has said, "our ability to capture the politics of change in cases like India's transition from an indigenous to an imported one is seriously impaired by the vast socio-economic gap between people who theorise and those who pursue school teaching as a career". Thus, educational theory which is not born in the course of practice and not merely in relation to it, lacks relevance for a discipline like education, which is essentially of a practical nature.

Before proceeding further, let us also look at the prevalent conditions of the teachers. They have continued to be at the lowest levels in the education hierarchy, without any autonomy essential for working in the liberal perspective. They mostly have very little promotional avenue. They

tend to have low motivation levels due to their position and sense of alienation. Many a time they are ill treated. Innumerable non-academic responsibilities and a lot of paper work with the pressure of meeting the target of universalisation, building up enrolment drives, collating enrolment, etc. have added to the list of their tasks.

5.3 Role of the Teacher in the Light of NCF (2005)

However, what is challenging is the role of the teacher that emerges in the light of the NCF (2005). It is very different than the above discussed conventional role of a teacher in a conventional system of education. *This is because the talk is of an education which is an alternative to the conventional one.* The situation becomes more complex in the context of the prevalent conditions under which teachers continue to work today.

Some of the questions regarding teachers that can be posed with regard to the NCF (2005) are:

- Has the NCF (2005) resulted in any shifts in the perceived role of the teacher?
- Is it possible to translate this role into real life situation of the existing classroom?
- To what extent are the present teacher education programmes equipping teachers to respond to the near roles?

It is necessary to place the emerging role of the teacher in the light of NCF (2005) in relation to the curricular, co-curricular, social and national roles that a teacher has to fulfil.

5.4 The Teacher in a Changing Society

The NCF brings to the forefront a changing society with its shifts in focus within the school system in response to socio-economic changes. The problems or challenges pertaining to class/caste/religion conflicts, impact of science and technology and issues of liberalisation, privatisation and globalisation have put in tremendous pressure for change upon our school education and along with the learner and the nature and process of learning, the concept of a teacher in a changing society has undergone a shift. The NCF (2005) talks about the responses to this flux. There is no denial but an emerging consensus within India's six million-strong academic community that McCauley's Education of over a century old needs an urgent make-over. With 21st century India burdened with the world's largest population of illiterate citizens, an estimated 59 million children in the 6-14 age group out of school, and the aggregate number of names and addresses of job seekers in the registers of employment exchanges across the country having swollen to 41 million – not because there aren't sufficient jobs, but because the youth streaming out of the obsolete education system have continued to remain unemployable. It is in this backdrop that the

aims of education laid down by NCF (2005) assume significance. NCF (2005) envisions to initiate lifelong reforms, starting with steps to improve systemic efficiency and accountability. The broad guidelines given by NCF (2005) simultaneously reflect the current needs and aspirations of a society as well as its lasting values and the immediate concerns of a community, along with broad human ideals. At any given time and place, they can be called the contemporary and contextual articulations of broad and lasting human aspirations and values.

The NCF (2005), thus, defines an aim as a foreseen end; it is not an idle view of a mere spectator, rather, it influences the steps taken to reach the end. An aim must provide a foresight. It does that in three ways:

i) An aim involves a careful observation of the given conditions to see what means are available for reaching the end and to discover the hindrances in the way. This may require a careful study of children and an understanding of what they are capable of learning at different stages.
ii) This foresight, then, lends a direction to the order or sequence that would be effective.
iii) It makes the choice of alternatives possible.

Thus, an aim is an essential pre-requisite of planning in education. The school, the classroom and the related learning sites are spaces where the core of educational activities takes place. These must become spaces where learners have experiences that help them achieve the derived curricular experiences. An understanding of learners, educational aims, the nature of knowledge and the nature of school as a social space can help to arrive at principles required to guide the classroom practices.

Thus, a review of NCF (2005) reveals that it sculpts the aims of education from out of the landscapes of social values. It puts forth the following ideals:

- A commitment to democracy and the values of equality, justice, freedom, concern for others' well-being, secularism, respect for human dignity and rights. Education should aim to build a commitment to these values which are based on reason and understanding. The curriculum, therefore, should provide adequate experiences and space for dialogue and discourse in the school to build such a commitment among children.
- Independence of thought and action points to a capacity of carefully considered, value-based decision making both independently and collectively.
- Sensitivity to others' well-being and feelings, together with knowledge and understanding of the world, should form the basis of national commitment to values.
- Learning to learn and willingness to unlearn and re-learn are important as means of responding to new situations in a flexible

and creative manner. Thus, the curriculum needs to explore the processes of constructing knowledge.

- Education must develop the ability to work and participate in economic process and social change. This necessitates the integration of work with education. It should be ensured that work-related experiences are sufficient and broad based in terms of skills and attitudes so that they foster an understanding of socio-economic processes and help inculcate a mental frame that encourages working with others in a spirit of cooperation. Work done can create a social temper.
- Appreciation of beauty and art forms is an integral part of human life. Creativity in arts, literature and other domains of knowledge is closely linked. Education must provide the means and opportunities to enhance the child's creative expression and the capacity for aesthetic appreciation.

These aims of education compel us to focus attention on two sets of challenges for reform – pedagogic and systemic. The first set includes national designing of syllabi and textbooks, teacher training and examination procedures. The second set calls for more resources for school infrastructure and a change in roles and power relations from the ground level upwards.

Thus, it is clear that the concept of knowledge and the learner have undergone a shift in NCF (2005). So, it becomes imperative that the concept of a teacher and his/her role and function be viewed afresh. The professional preparation of the teacher and the in-service training that he/she undergoes determine the concept of a teacher to a great extent.

Following the Kothari Commission (1964-66), teacher education gained crucial importance as the commission recommended that teacher education institutions be brought to mainstream academic life. The Teacher Commission-I (1983-85) correctly envisioned that if we are looking for revolutionary changes in the school, then similar changes must sweep the teacher education institutes first. A decade from thence, the Yashpal Committee Report (1993) also emphasised upon professional preparation of the teacher for acquiring the abilities of self-learning and independent thinking.

The NCF (2005) highlights the key role of the teacher as a facilitator and being supportive to learning. It does not thrust new roles all of a sudden, but a preamble to these new facets of a teacher can be traced back to 1960s. That which is misinterpreted as a change today is more of a gradual shift which has been brought to focus today through various systemic and pedagogic reforms.

NCF (2005) looks at the teacher as an active agent to aid the child in knowledge construction by acting on his social and physical environment. It puts forth a constructivist approach to knowledge and, in turn, looks at the role for teacher education in developing and furthering this perspective in contrast to the behaviouristic orientation. When such are the aims of

education, the teacher, then, is a reflective practitioner both within and outside the four walls of the classroom. The NCF (2005) has summarised this new vision of teacher education as follows:

Major Shift	
From :	*To :*
• Teacher Centric	Learner Centric
• Stable Design	Flexible Process
• Teacher, Direction and Decisions	Learner Autonomy
• Teachers Guidance and Monitoring	Facilitation of Learning
• Learning in Group	Cooperative Learning
• Learner Receptivity	Learner Participation in Learning
• Knowledge 'given' Fixed	Knowledge Evolves
• Linear Experience	Multiple Exposure
• Common Learning Tasks	Individualised Learning Routes
• Disciplinary Focus	Multi-disciplinary Educational Focus

Source : NCF 2005, p. 110

Thus, in a nutshell it may be said that the role of the teacher (as presented above) can be better understood by looking at the aims of education as elucidated by NCF (2005). The NCF (2005) states, 'The aims of education simultaneously reflect the current needs and aspiration of a society as well as its lasting values ...' These contemporary and contextual aims largely are – commitment to democracy, capability of value-based decision making, both independently and collectively; national commitment and values, responding to new situations in a creative manner; ability to participate in economic processes and social change; appreciation of beauty and creativity in art forms. NCF (2005) and the focus group paper in teacher education view the teacher of the day to be an encouraging, supportive and humane facilitator in teaching-learning situations in order to enable learners to discover their talent and to realise their physical and intellectual potentialities to the fullest. In this context, as stated earlier, the teacher has to play the role of a reflective practitioner, one who would follow the constructivist approach to pedagogy. Curriculum would, thus, emerge from the learner needs instead of being pre-determined. So, the teacher is a facilitator of the teaching-learning process.

According to the NCF (2005), by including and encouraging the values of equality, justice, freedom, concern for others' well-being, secularism, respect for human dignity and rights, the teacher can explain the pluralistic nature of Indian society and can develop character and desirable social and human values to function as responsible citizens. So, the teacher is an agent of fostering and promoting values in the context of pluralistic nature of Indian society.

The focus group paper of NCF on Teacher Education clearly states that instead of training teachers to adjust to the system, teacher education should attempt at educating teachers who would reconceptualise the system. In this context, the teacher education system in the country has to be affected so that what does not happen is the following – curriculum reform without the support of adequate changes in teacher education, a yawning gap between pre-service and in-service education, lack of linkages between the society and school and teacher education, failure on part of student teachers to reflect upon curriculum, pedagogy, textbooks and most of all, on their own experiences.

5.5 Addressing a Pedagogic Issue

The above discussed point which brings out the importance given to experiences lends itself to a review. NCF (2005) appears to provide a framework that would allow 'teachers' and schools to choose and 'plan' experiences that they think children should have. However what is not indicated is the policy and infrastructure which would be required for any educational choices to be feasible. Thus, it appears that *mere autonomy granted to teachers in the absence of an appropriately designed and implemented policy, sufficient infrastructure and resources, may not be able to facilitate the meeting of the constitutional obligation of educating all children equitably.*

This is because what the teacher might choose as local knowledge for the child may derive from her own process of socialisation. Thus, one may have to distinguish between using a pedagogic method that draws upon the local habitat and society of a child to communicate better with her and a guidance which includes 'physical, cultural and social preferences' (as stated in NCF) to be part of its policy. The use of greater autonomy by the teachers *demands* both a social training of teachers and availability of resources for providing teaching aids. The real situation in our Indian context is that majority of schools do not have any resources or well-trained teachers, except textbooks which, therefore, become significant for use. Thus, the place of textbooks cannot be undermined.

6. Re-conceptualising the Role of the Teacher in the light of NCF (2005)

In fact, the NCF 2005 refers to teachers more as 'passive' agents of the state who are expected to be 'persuaded and trained' to somehow magically translate the vision of NCF (2005) in schools. So, instead of being agents of curriculum renewal, teachers, most of the time, are viewed as agents of the state. The NCF (2005) itself states that teachers must be oriented to the perspective of the new curriculum framework. A close analysis of the NCF (2005) reveals that even though in it, a new vision of the school curriculum is articulated as an inclusive space beyond the conventional textbooks, it somehow, fails to engage enough the agency

of the teachers as that is the most crucial link for making education a 'catalyst' in the process of social transformation. Thus, instead of having a utilitarian worldview and considering the teacher as a facilitator, *what is required is empowering of the teacher by her proactive engagement in the process of curriculum re-design. What is coming to the forefront is that a radical change in the school curriculum without changing the central reality of the teachers in Indian classrooms may not be able to do much in altering educational processes and outcomes.*

The teacher's role as a facilitator, as enunciated by the NCF 2005, also appears to be challenging in another way. A true facilitator is one who reconstructs the curriculum using the child's own experiences. However, the NCF (2005) offers very limited direction as to how teacher can be prepared to include hitherto excluded social narratives, experiences and voices to make them available in the classroom for enriching the teaching-learning process.

A recent study (CIE 2007) also indicates that the NCF (2005) has been presented in such a manner that it is understood by the teachers and student teachers only partially. This can be elaborated. According to the perception of the student teachers and teachers, the aims of education are limited to academic excellence and, to some extent, personality development of students. It emerges that there is a clear gap regarding the notion of education between the demands of the NCF (2005) and the perceptions of student teachers, the teachers and principals.

All of the above have tremendous implications for teacher education. Teacher education, in the future, would have to be reconceptualised to ensure a proactive engagement of the school teacher. Only then it would be possible to address the aims of education as laid down in the NCF (2005).

6.1 Curriculum Renewal and Facilitation of Learning

The NCF (2005) suggests some principles of curriculum reform :

Connecting knowledge to life outside the school.

Ensuring that learning shifts away from the rote method.

Ensuring that learning moves away from being textbook centric.

Making examinations more flexible.

Nurturing caring concerns for the democratic polity of the country.

Empirical evidence (CIE 2007) indicates that at present, teachers and principals are not empowered enough to perceive that the teachers can be at the policy making and programme designing stage. The known comfort of 'completing' the syllabus is too much to forego. Further, at the school level, there is a tendency to confuse and thus use the terms 'syllabus' and 'curriculum' synonymously. It appears that the NCF (2005) has set somewhat *lofty aims of curriculum renewal through the agency of the teacher but offers little clarity how this is to be done.*

It is becoming evident that the NCF (2005) has, on the one hand, done little to 'treat' the myopic vision from which our student teachers and teachers and principals generally suffer about the teachers role and on the other hand, the document itself does not offer much clarity or scope on teacher empowerment.

However, what has emerged is the understanding that teachers cannot remain mere agents or facilitators but have to be provided space – be it intellectual, physical or social – for creating and designing the curriculum.

6.2 Fostering an Understanding of the Pluralistic Nature of Indian Society

The NCF (2005) puts the onus upon the teachers to inculcate and encourage the values of equality, justice and freedom to foster an understanding of the pluralistic nature of the Indian society. However, neither there is any vision about this in the mind of the stakeholders of education at the school level, nor is any direction provided to them by the document itself in this regard. The prime focus, at the school level, is the perception of teachers and principals that socially acceptable and economically self-relevant individuals have to be produced as an end product of the process of education.

Thus, if NCF (2005)'s vision of schools as sites of social transformation leading to an egalitarian and just social order is to ever become a reality, then at the policy level, the vital need of transforming the state of teacher education in India has to be addressed in much more a qualitative proportion. This is because the teacher is still viewed to be a passive deliverer of state-prescribed learning. Thus, issues of inclusion and exclusion, gender disparity, communalism and the marginalised children would remain theoretical topics for discussion without opening of any alternative avenues for creation of institutional structures and mechanisms that offer change from the legitimate exclusion of this discourse for mainstreaming teacher education.

7. Implications for Reforming Teacher Education

It is often said that most school teachers are under-trained or ill-trained, under-qualified, demotivated, stressed and burnt out. They are themselves a product of a largely mechanised system of education and teacher education. It is in this light that if the NCF (2005)'s aim of social transformation through curricular reform has to be realised, then it emerges quite coherently that the pre-service and in-service teacher education would have to be re-conceptualised. This is because it has a direct impact on what kind of a teacher would be prepared and for what role.

It also emerges that there is an urgent need to enhance the professional identity of school teachers. As the position paper of the National Focus Group on Teacher Education for Curriculum Renewal (2005) puts it – Due to the diluted identity of the teacher as a professional,

various stakeholders of education and the teachers themselves have lost faith that they can be empowered to "bring about a change within the school system and communities".

Further, empirical evidence also reveals that there is a yawning gap between pre-service and in-service education of teachers. With little effort made for linking the two, the real need of the teachers remains unaddressed and the teachers remain intellectually isolated and arid, being severed from centres of higher learning.

It is also highlighted that the design and practice of present teacher education programmes are largely based on certain assumptions about curriculum, knowledge and social framework which offer very little for the progress of ideas and professional and personal growth of the teacher. These notions need to be re-thought and re-conceptualised in the new framework of education and teacher education.

However, the situation is not so simple. As discussed in the first part of the paper, a glimpse into the past reveals that it was the 'factory' model which characterised the first generation strategies for implementing changes in pedagogy and curricula where teachers were compliant, unreflective and uncritical implementers of a centrally developed package. The second generation pedagogic reforms need to invest in building on the teacher capacity to act as autonomous reflective groups of professionals who are sensitive to their social mandate, to the professional ethics and to the needs of the rather heterogeneous client groups. Any new curricular or pedagogic vision has to be born first in the teachers' mind. The vision has to germinate there incorporating in it the essential characteristics of the local context. Only then it can take roots in practice. "It was right to struggle against the old school, but reforming it was not so simple as it seemed. The problem was not one of model curricula but of men, and not of men who are actually teachers themselves but of the entire social complex which they express" (Gramsci Prison Notebooks, p. 25, Menon, 2003).

Thus far, the discussion has revealed the implications that the NCF (2005) has for teacher education in our country. These implications directly impinge upon the design, administration and organisation of specific teacher education programmes.

The importance of Teacher Education Programmes can be located in the emerging need for professional development of teachers. Various institutes were established following the emphasis in NPE (1986) for the professional preparation of teachers such as the DIETs, SCERTs and CTEs through the Centrally Sponsored Scheme for Teacher Education and Re-organisation. Thus, the NPE was put in place pro-actively by the government and further decentralisation efforts led to the creation of BRCs and CRCs.

The need for teacher education programmes has also grown because of the spatial and numerical expansion of schooling facilities at primary, upper primary and secondary levels. As discussed earlier, this has resulted

in corresponding increase in the demand for teachers and hence, availability of programmes for teacher education. The recent constitutional amendment making education a fundamental right reasserts the political commitment of the state towards education for all children in the age group 6–14 years. This poses exceptional challenges for teachers. Teacher education programmes need to be revitalised and the central role of the teacher in the process of educational reforms needs to be recognised.

As brought out in the earlier sections, the school education system reveals several systemic gaps in the area of quality, both of school education and teacher education. Across the states in India, a number of contradictions appear to be evident in the process and structure of school education thereby impacting teacher education. For example, even the nomenclature used in classification of teacher education programmes for the elementary stage of education varies from state to state and is not consistent with the constitutional commitment. And this has been given approval by the National Council of Teacher Education (NCTE) itself.

On the other side, viewed in the context of current realities and the demands of the NCF (2005) particularly, teacher education programmes are found to be inadequate in terms of academic organisation, relevance and professional skills. Studies such as that of Behari (2008) have pointed to this. Quality issues in school education are inextricably linked to quality issues in teacher preparation and hence, its programmes – thus, the when and how they are designed becomes crucial. If one looks at the teacher education institutions offering the programmes, it is seen that they largely exist as insular organisations even within the University System where they are located. Whereas looking at the policy context, one realises that the Kothari Commission had emphasised the need for teacher education to be 'brought into the mainstream of the academic life of the Universities on the one hand, and of the school life and educational development, on the other'.

The NCF (2005) reminds us to view the Yashpal Committee Report (1993) in all seriousness. The Yashpal Committee had recommended that . . . "the content of the (teacher preparation) programme should be restructured to ensure its relevance to the changing needs of the school situation. The emphasis in these programmes should be on enabling the trainees to acquire the ability for self-learning and independent thinking."

Viewed in the context of the NCF (2005) itself, as the discussion so far has revealed, a comprehensive framework has been provided in it for child-centred education. The perspective on education has shifted from rote-based transmitting of information to making teaching a means of harnessing the child's creative nature. There is an unprecedented public demand for quality education. The discussion on NCF (2005) has revealed that the two important concerns voiced are connecting knowledge to life outside the school and enriching the curriculum by making it less textbook-centred. Thus, as has emerged, teachers would have to be prepared to help children move away from rote learning and, instead, provided with

an opportunity to 'construct' knowledge based on their observations and experience. This implies that teachers would have to be able to play an active role in the design of learning materials and have the knowledge and skills to organise meaningful learning experiences. They should be able to use evaluation as a means of self-evaluation. The ultimate need is that the teacher would organise several support mechanisms including a pool of learning resources to choose from, the skills to identify developmentally appropriate text materials, a critical and analytical mind and the opportunity to engage children with learning resources outside the classroom.

All this implies that we would be desperately in need of teacher education programmes which prepare teachers for this task. This seems a tall order. This is because there is hardly any direction to begin such a teacher education programme. In the NCF (2005), there does not appear to be any enabling provision for an official and collective institutional mandate that such challenging tasks demand. In any case, one thing seems to emerge, and that is, that in the design and implementation of such a teacher education programme, the Universities would have to play a major institutional role at the national level. The very understanding of 'learning' would need to be re-defined in our Indian context where millions of children are enrolled but 'not learning'. So, the question of 'school knowledge' arises and the place of inter-disciplinary engagement with the learner. The Teacher Education programme and what its curriculum ought to be needs to be brought in this frame.

Perhaps, the revised draft Curriculum Framework for Teacher Education prepared by the NCTE in collaboration with the NCERT (2006) assumes significance since it points to the necessary space and vision for a convergence between school curriculum and the education programme for teachers. The challenge for the future is enabling an appropriate institutional response for the concrete realisation plan schemes. This is what the government's role and initiative ought to be.

8. Envisioning the Teacher Education Programmes

Since in tune with addressing the NCF (2005), the teachers have to be prepared or rather empowered in the new conceptual, pedagogic and socio-cultural dimensions, the curriculum of the teacher education programme would have to be re-organised more structurally and pedagogically. The possibility of each Teacher Education Institution evolving a field-laboratory (e.g. a block, locality or school cluster) to address the issue of UEE and linking its academic project with field based projects would help lay the foundation of the triangular relationship among the community, school and the teacher education curriculum in a symbiotic framework. The challenges and problems of harnessing India's pluralism for national development are important.

Technology emerges to occupy a pivotal place in education and

thereby in all programmes of teacher education. The central aim of introducing technology in teacher education is to develop and promote openness for new thinking in an atmosphere of innovation, through introduction of methods that are interactive, away from the lecture-based but are enjoyable, non-threatening and self-paced. Integrating ICT into teacher education is also necessary for bridging the digital divide between the government and the private teachers, rich-poor and urban-rural by providing opportunities to effectively use technology to further educational objectives. The central theme of the deployment of technology in teacher education is transforming institutes of teacher education and teacher training including SCERTs and DIETs. This further gets strengthened by the findings of a study being conducted by the Central Institute of Education (CIE) of the Delhi University to develop a programme for capacity building of teachers and teacher educators. The need based findings have brought out the use of ICT as a crucial input in the design of such a programme of teacher education that focuses on professional development and furthers the process of professionalisation of teaching. The rapid expansion of ICT in India, the exclusive development of a satellite system to enable educational communication and the increasing use of strategies such as tele-video-conferencing to network teachers, teacher educators and curriculum developers are indications of revolutionary new opportunities. Thus a 'good' teacher should be able to remain update with concepts like team teaching, programmed learning, individualised instruction and be technologically oriented and aware through his/her programmes. A web based teachers' portal can act as a neighbouring forum. In order to keep abreast of the latest developments not only in their field of special interests but also in areas of educational development and social and cultural issues, continuous *in-service orientation programmes for teachers assume significance*. Envisioning the process of an ongoing professional development of the teachers, thus, would have to find a place in the new approach to teacher education.

Going back to history, we find that the year 1995 witnessed the establishment of the apex regulatory body in teacher education, the National Council for Teacher Education (NCTE) through an Act of Parliament. In 1996, the NCTE Discussion Document titled 'Curriculum Framework for Teacher Education' was brought out, followed by the publication of the NCTE Curriculum Framework (1998). It took stock of the context and concerns of teacher education ranging from 'constitutional goals' to 'commitment and performance in teacher education.' More so, it emphasised the symbiotic relationship between pre-service and in-service teacher education and recommended updated curricula for teacher education programmes for various levels of school education.

The recent National Knowledge Commission (2006) has also highlighted that teacher training should not be seen in terms of a finite period of time but as a process by which the quality of teaching and learning in the classroom can be regularly improved, in a context that fosters an

attitude of lifelong learning. Therefore, there should be a mechanism for feedback and subsequent interaction between teachers and the training institutes, especially for pedagogical techniques that are new or require more continuous innovation from the teacher. The National Knowledge Commission further says that currently in-service training is offered through pre-determined themes which may not be relevant to the requirements of classroom situations.

Thus, the implications for teacher education programmes are in terms of developing teachers who will not fit in snugly within the existing educational system in a passive and uncritical manner but play the role of catalysts for change and institutional renewal. Structural as well as intellectual and experiential space for student teachers would have to be inbuilt in such a programme. A major assumption characterising this perspective is that teaching is praxis and that professional development of teachers has to have two distinct but inter-related foundations – practice based on reflection and reflection based on practice. Thus, cutting across the various stages of education, the teacher education programmes would have to focus not merely on experiential learning, but if reflection on practice has to go beyond the superficial narratives into the subterranean realms of analysis and deeper levels of cognition and internalisation, there has to be a systematic attempt at developing conceptual categories deriving from theory.

The teacher education programmes have the challenge of developing professional skills and competences related to several aspects of teaching such as planning, developing curriculum, managing examinations, developing textbooks, conducting research, working in alternative school systems; providing educational experiences aimed at enabling teachers to critically relate to the social context of their professional practice as well as to the policy and administrative environment of the school system.

9. Implications for Policy Development in Teacher Education

As the entire discussion tends to unfold, one thing becomes clear, the response to "NCF (2005): Implications for Teacher Education" is that teachers would have to be *empowered.* For empowerment to become a reality, certain steps have to be taken.

Both the conceptual as well as the operational framework of the policy would have to take cognizance of the larger context within which the education system functions – such as the social structure, social relations, and curriculum and pedagogy as reflections of these structures and functions. The infrastructural requirements of schooling would have to be addressed in the policy if the NCF implications are to be viewed. And the systemic concerns in education would have to be immediately addressed.

10. Conclusion

The process of the study of the document NCF (2005) has raised several questions. Some of these are:

- NCF talks of ongoing professional development of teachers but, at present, there is a mismatch and non-continuum between the initial preparation and subsequent professional development of teachers. The question is: Where are the structures required to bridge the hiatus? It is not enough just to have good intentions.
- NCF talks of pedagogic and curricular approach which behests a lot of responsibility and ownership on the part of the teacher. The question is: Can this come automatically without the creation of appropriate structures that enable this to happen?
- NCF emphasises a lot of teacher-initiated activities in the classrooms. The question is : Won't this remain wishful thinking unless a realistic and empirically established model of large scale preparation of teachers is there to enable them to develop the required skills, abilities and attitudes for this?
- NCF invests a great deal of hope in the way curricular transaction has to take place in schools. The question is: Where are the conditions that ought to be created in schools for this to happen?
- Therefore, the major question is: Is the NCF (2005) merely talking of platitudes which are far away from reality?

In any case, what is certain is that in such a large system, implementation that takes cognizance of the 'quality' dimension is a real challenge. Creation of infrastructure, other institutional structures and mechanisms, dismantling of hierarchical collectives and empowerment of teachers are issues within which any future policy framework has to be conceptualised. This emerges as the crux of the whole issue for bringing about a paradigm shift in the futuristic vision of teacher education.

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Chapter 5

Innovative Teacher Education Models and Practices: A Critical Review

B.K. PASSI

1. Innovations in Teacher Education: Current Scenario

In India, innovative Teacher Education Programmes are organized by a variety of institutions spread all over the country. Some of these institutions and the National Council for Teacher Education (NCTE) are concerned with improving the quality of teacher education and use their control mechanisms as instruments for supporting and sustaining innovations. Yet many of such teacher education programmes are old and vague. They are just surviving with the same old techniques of quality controls rather than creating new transformation through innovations. Some of the issues related to quality of teacher education are old and are related to: ideology, financing, commercialization, management, infrastructure, reservations, quality control, updating curricular contents, admission, attendance, teaching, examinations, appointments, qualifications, and so on. But quality control may not be the same as creation of innovations.

As a first priority, the ideological issues related to innovative pedagogy must be dealt with more seriousness. Creating a holistic pedagogy with characteristics of creative, critical and caring aspects of thinking must be addressed. Likewise, the goal of teacher education programmes must be aligned to prepare teachers as good persons, and not only as smart persons. How do we go about all these issues? The answer lies in creating an environment of being innovative.

Another question is who should monitor innovativeness in the given environment of a rigid system of teacher education? How do different academic bodies and persons create innovations in the form of new systems? How do the organizations connected with teacher education as well as teacher educators, teachers, parents and students engage themselves in creating innovative approaches in teacher education? What can media do for building a supportive environment in favour of

innovations? To become an innovative system of teacher education, what are the internal requirements?

Innovativeness requires freedom and accountability. The external accountability with absolute powers in the hands of outsiders may not be the solution. At the same time, we cannot drop and ignore the issue of accountability. In fact, we might have to try some new models of accountability.

We have to build a culture of innovativeness by streamlining a culture of giving freedom, culture of using freedom, introducing responsible accountability and providing adequate infrastructure. Some of the national and state level institutions have played their role in encouraging innovations with varying degrees of success. A few such examples are cited below.

The UGC has attempted to improve the quality of education by the introduction of model curriculum, detailing the contents of syllabi, launching of the National Eligibility Test (NET), prescribing qualifications for teachers and so on. These have been introduced with a good faith but the extent to which they have helped for creating innovativeness in the system is a matter of study.

Likewise, the NCTE as a body with statutory powers has a significant role in supporting innovations in teacher education. However, it is confronted with many difficulties of uncontrolled expansion, commercialization, litigations and many more. Its effort of introducing norms and standards has an intimate relationship with quality of teacher education. It has always supported the environment of flexibility that is required for innovations and has encouraged some experiments in this direction.

The university system must understand that conducting routine activities is not enough for innovativeness in education. In the universities, the required climate of risk taking and tolerance to ambiguity are absent. Perhaps, the university system is failing to face the external pressures; the system looks helpless for introducing innovations. Innovativeness is possible only if the universities are managed boldly and if overall freedom exists even at the lowest level of operation.

Similarly, the governments with their departments and other institutions have introduced the elements of objectivity, uniformity, standardization of inputs and standardization of processes. But environment for innovativeness is dismal within this kind of management. Our examining bodies too have a role for supporting innovations in the field of evaluation. But admission and promotion procedures within the institutions are rigid. For example, innovation like impressionistic evaluation is looked down upon with doubts. Rather, there is a need to change this point of view. In fact, the innovations need to be looked at from their uniqueness, local relevance, sufficiency, novelty, meaningfulness, wisdom and the preferred subjectivity points of view.

Financial rigidity of rules also bulldozes innovativeness in any system. So, the question is how can innovations be created in teacher education

in spite of the truth that many of them are financially supported by the state? Teacher education system must liberate itself from the colonial baggage of uniformity, centralization, externalities and fragmentation to nurture innovations. Rather, the management and teachers at all levels should enjoy an environment of trust, freedom and local autonomy and, in turn, teacher education must accept the responsibility.

2. Innovations, Creativity and Best Practices

If an environment of encouraging innovations has to be created the trinity of creativity, innovations and best practices must be understood.

What is meant by creativity? Creativity is defined as the ability to generate and use insight. Creativity has elements of originality and imagination. Creativity involves freedom to design, to invent and to dream. To some extent everyone is capable of being creative; however, most people do not exploit their full potential as they do not know the clear process of guiding the flow of creativity. A Learning Society requires the twin developments of individuals as well as that of the group. Left alone, creativity is less useful. We need to go to the level of innovations.

What is meant by innovation? Innovation is the process of developing an idea into a creative action. In order to develop innovations we need to have a new environment that encourages innovativeness amongst the teacher educators. This kind of encouraging environment requires an organizational culture, open leadership style and adequate resources. In fact, this encouraging environment needs a new dynamics of upward, downward and horizontal communication.

What is meant by best practices? A best practice is any ongoing activity that has stood the test of time, whereas an innovation is a new event which has been recently installed and has yet to prove its long term sustenance. Of course, at the time of its origin, the best practice activity was an innovation. Once the best practice is identified, it is important to encourage its wider applications.

3. Criteria for Innovations

How can innovations be examined and reviewed from short and long term perspectives? There is a need to have some criteria for labeling an idea as an innovation. The criteria will have multiple dimensions like validity, utility, feasibility, sufficiency and sustainability of innovations. The general criteria of examining innovations in teacher education must work within the general framework of educational philosophy, pedagogy, ideology, acceptability, economy and so on. Another aspect of the selection of examining criteria is from the perspective of its impact in terms of its efficiency, effectiveness, ethics and environmental outcomes.

The Central Board of Secondary Education (CBSE) has suggested that while selecting the criteria for innovations, ethics, efficiency, equity, excellence, empathy, education and environment must be considered as the parameters for the chosen criteria.

4. Classification of Innovations

The classification of innovations in teacher education may be based on two parameters. The first parameter is "status of innovation" whether launched or merely proposed. The second parameter is whether the innovation is a full-fledged, whole-model or is it a component of any other parent model?

Based on this suggested parameter, there can be four kinds of innovations in teacher education which can be grouped as: (a) launched (b) proposed; these innovations can be further sub-divided into two groups: (i) wholes and (ii) components. Thus, in all, there could be four cross-cutting groups of innovations: (1) Launched-Wholes, (2) Launched-Components, (3) Proposed-Wholes and (4) Proposed-Components. Some details of these innovations have been given on a one-to-one basis. In addition to this, open teacher education has been dealt with separately. In short, it is suggested that an approach of plurality of models will be useful for creating an innovative environment in teacher education. Therefore, six new full-fledged teacher education models have been proposed. Also, one model that was envisioned by the NCERT.

5. Innovative Programmes of Teacher Education

In the first group of innovations, the ongoing Teacher Education programmes will be dealt with. These full-fledged models (Launched-Wholes) were launched in their whole format in some parts of India.

During the post-independence era, the following teacher education programmes were conceptualized and launched. Some of them are continuing as they were, while some others have expanded and still some others have been discontinued. Twelve examples are given below:

- Four-year integrated programme of secondary teacher education, Kurukshetra University, Kurukshetra (1955).
- Four-year integrated programme of secondary teacher education, Regional Colleges of Education, NCERT (1963).
- Secondary teacher education programme, Gandhi Vidyapeeth Vedchchi, Gujarat (1968).
- Hoshangabad science teaching programme (HSTP): Training Teachers, Eklavya, Madhya Pradesh (1982).
- Pre-primary teacher education: Mirambika, Sri Aurobindo Educational Society, New Delhi (1983).
- Need-based teacher education programme, MP.
- B.C.Ed. Secondary computer teacher education programme, DAVV, Indore (1989).
- Activity-based secondary teacher education programme, DAVV, Indore (1991).
- Four-year integrated programme of elementary teacher education, (B.El.Ed.), University of Delhi (1994).
- The 'Anweshana experience': A participative teacher education

programme: B.Ed. Enriched, Department of Education, Banasthali Vidyapith, Rajasthan (1997).

- Comprehensive teacher education programme: Gandhi Shikshan Bhawan, College of Education, Mumbai University, Mumbai (2000).
- Two-year extended Programme of secondary teacher education in RIEs of NCERT.

Details of most of these models/programmes have also been given in the NCERT Framework for Teacher Education Curriculum Renewal (2005). A reference and a brief description of some of the models which were not listed in the NCERT document are outlined below.

5.1 Activity-Based Secondary Teacher Education DAVV, Indore.

This model has a long history. In this model, teaching is done by the student teachers instead of the teacher educators. Students collectively or individually prepare the topic and make theoretical or activity-based presentations. Teacher educators associated with this programme help the student teachers in identifying learning resources, learning the topic, preparing for presentations and post-presentation discussions. Students enjoy the initiative, activism and group work. This Programme has been running for the last two decades. Its impact has been studied by Passi, Tyagi and Gupta (1992). The research monograph was published as "Personalized Teacher Education: Lending Flesh to an Idea". Later, Tyagi and Joshi (1993) completed another study for assessing the acceptability of the programme.

5.2 Activity-Based Elementary Teacher Education

In addition to the above, an Elementary Teacher Education Programme was launched in the District Institute of Education and Training (DIET), Daryaganj, Delhi, and is reported here as Launched-Wholes. The inspiration to launch it originated from the of Hoshangabad Science Teaching Programme (HSTP) of Madhya Pradesh and Mirambika Programme of New Delhi. The decision to launch Elementary Teacher Education Programme was taken by the DIET faculty. They introduced it as a self-managed and a self-resourced activity-based elementary teacher training programme. Faculty members were oriented through a series of workshops.

The programme was launched on a voluntary basis. About two dozen volunteers joined the programme. A small "institution" in the institution was created by the Principal and his faculty and the participating students collectively planned the programme and managed the same through participatory processes. The group worked like members of a well-knit family.

Personal and professional difficulties were shared mutually and solved

collectively. One of the professional issues was related to the question – how can teachers be prepared for true teaching? Three guidelines of true teaching as envisioned by Sri Aurobindo were followed: the first principle is that nothing can be taught; the second principle is that mind is consulted in its own growth; and the third principle is that education works from the near to the far, from what "is" to that which "should" be. This kind of understanding became the basis of designing the activity-based teacher education. The second principle says that the mind has to be consulted in its own growth, therefore, the planned activities in this teacher education programme are open-ended.

A child can find out a way on his own. If a child has a workable idea of his own he is allowed to be busy with that. Children often learn in spurts, a time of one-pointed concentration on a specific concept. If space and freedom are allowed for such spurts, the child learns his concepts very thoroughly because the assimilation and utilization are self-directed.

Activity-based learning environment of this kind helps a child at a young age to become aware of personal capacities and to start taking responsibility for his own actions.

Activity-based learning environment aims at creating a self-directed and a self-corrective learning process for all the parts of the being. The students of this Activity-based Teacher Education Programme planned, prepared and monitored the physical layout of a specially designated room. Aesthetic care was a dominating principle of the physical environment; however, economic aspects of this exercise were also considered. There was no extra administrative support. This training place was not a study room in the routine sense but it was much more. It was a study room, resting room, living room, dining room, library room, store room, and even a meditation room. It was an all-in-one room. Different corners and spaces of the room were earmarked for different activities. Understanding and experience suggest that such a facility is the most important input for carrying out a self-managed activity-based programme.

To keep the environment alive and communicative, the learners developed activities together and also developed new kinds of skills. The cooperative, free and integrated environment of innovative strategy needed careful understanding on the part of the decision-makers. Activity-based teacher education was useful for producing reflective teachers through a constructivist approach. Reflective teachers argue that the trend towards developing a theoretical framework in teacher education is resulting in a movement away from a positivist orientation to a more constructivist approach to teacher preparation.

5.3 Integrated Teacher Education Programmes

The Regional Institutes of Education (RIEs) of the NCERT have been offering B.A./B.Sc./B.Ed. and M.Sc./Ed. integrated programmes of Teacher Education. Also, a two-year B.Ed. programme. The Delhi University is offering 4-year integrated programme for elementary teachers (B.El.Ed.).

Modular Integrated Teacher Education Programmes for Higher Education and Teacher Education Programmes on e-learning have also been formulated by some of the institutions.

5.4 ICT-Based Teacher Education Programmes

A variety of special programmes of ICT in Teacher Education such as Bachelor of Computer Education (B.C.Ed.) and Master of Computer Education (M.C.Ed.) are being offered by the School of Education, DAVV, Indore, besides M.Tech. (ET) offered by the Department of Education, Kurukshetra University, Kurukshetra, B.Ed. (Educational Technology) offered by the AEC Teachers' Training College, Pachmari (MP) and Master in Educational Technology (Computer Application) offered by the SNDT Women's University. In addition to the programmes mentioned above, ICT in Education as a core course offered at B.Ed. level and Computer Education as a special area offered at M.Ed. level by the MSU, Baroda, ICT in Education as a core course at M.A. (Education) level offered by the Jammu University, Jammu, ICT in ELT offered by the H.M. Patel Institute of English Training and Research at B.Ed. level have also demonstrated their innovativeness.

6. Innovative Components in Existing Teacher Education Programmes

In this group of innovations, the currently ongoing innovative components belonging to their respective parent teacher education programmes are dealt with. They have been tried out in different formats in several parts of India and are labelled as Launched-Components.

A few teacher education institutions like those from Baroda, Delhi, Indore, Udaipur, Mysore, Mumbai and so on have launched them in the form of innovations. Some other exemplar component-innovations are – teacher behaviour, micro-teaching, educational technology, instructional modules, learning strategies, models of teaching, value-based teacher education, work experience, community work, Gandhian teacher education, special education, education of the gifted, evaluation system, foundation courses, method courses, practice teaching, media education, using radio for counselling, content-cum-methodology, etc.

These innovations and best practices are related to early childhood teacher education, elementary teacher education and secondary teacher education programmes. Some are instituted by the national bodies whereas some others by the universities and still others by some individuals.

- A few innovations are technology-centric whereas others are pedagogy-centric.
- A few innovations belong to the development of cognitive domain whereas the others to affective domain.
- Some innovations are linked to the nature of the learners.

- Some innovations are work-centric and others are subject-centric.
- Some innovations are community-centric whereas others are classroom-centric.
- Some innovations are based on individual learning activity whereas others are based on group learning activity.
- Some innovations are based upon reductionism kind of education whereas others are related to holistic education, and so on.

6.1 Proposed Innovative Components

In this group of innovations, a few component-innovations have been proposed but yet not launched. For example, Behar,[1] has suggested twelve innovations/reforms in teacher education. These are:

- Competency-Based Curriculum
- Flexible Modular Approach to Curriculum
- Higher Weightage for Non-Cognitive Domain
- Practical-Orientation in Real Situation
- Sandwich Field Experience
- Internship
- Faculty with Actual Experience of Teaching the Particular Level of Classes
- Learner-Centred Methods of Curriculum Transaction
- Teacher Education Institution as a Demonstration Institution for Schools
- Evaluation Methods
- University Teaching Departments in Education
- Training of Teacher Educators

Various Education Commissions and a few individual thinkers have proposed similar component innovations but they did not attempt to launch them. In fact, this was a kind of armchair thinking. Some suggest changes in learning paradigm from linear to holistic learning, from instruction to construction, from teacher-centred to learner-centred education, from school to lifelong learning.

7. Teacher Education through Open and Distance Learning (ODL)

In this group of innovations, currently ongoing wholes and components, both related to Open Teacher Education Programmes are dealt with. Some of these innovations are fully launched and some others are still in their infancy. These have been clubbed together and labelled as 'Launched-Components'.

Before going into the details of the fully or partly launched programme, the genesis of education and the beginning of Open Education need to be understood along with the genesis of the concept of a teacher and a school.

Child education has a long but unwritten history. It is agreed that the mother is the first teacher. Slowly, the tribe must have felt that it is not enough. Gradually, the tribe and the society must have felt the need of the external help for the development of the child. The tribe must have felt that they needed a special kind of mechanism in the form of a special outside person. Accordingly, the idea of Guru was identified. Along with that need, the institutions called Gurukulas must have been established. The King and the society must have taken the responsibility of funding this system. Later on, a new need for training of teachers was identified. Normal schools were established for teacher training. Like many other professions, teacher training became compulsory for seeking jobs in the State supported institutions. Meanwhile, the stakeholders must have entered into the scenario. The private parties started to play their commercial roles in the field of preparation of teachers.

Some other people felt to curtail this trend. In order to stop this commercialization and to maintain quality in teacher education, the NCTE was established. But there were two opposing demands in the situation – (i) controlling commercialization and (ii) a need for expanding open teacher education.

In the meantime, many other open universities got established at different places and some of them launched open distance education programmes of teacher education. Some of the examples are – Annamalai, Rohtak, Delhi, Kota, Nasik and Hyderabad. The IGNOU was established as a national university. This national university had instituted a UNESCO Chair in distance teacher education. Some of the traditional universities too stepped into the field of distance teacher education. The CIE, RCEs, NIE, NIEPA (NUEPA), State Boards of Education and other bodies too have joined this innovative programme of distance education, in some form.

A specially dedicated satellite called EDUSAT has been launched into space. Right to Education Bill is in the process. Now India wants to become Knowledge Engine of the world. India rightly aspires to become a 'learning society'.

How to go about it? Perhaps the media can become an active partner for creating a learning environment through informal pedagogy. Media must use informal pedagogy for powerful and bigger role of teacher education. For long, the media have fought for the preservation of their general freedom, freedom from political control, freedom from commercial interests and freedom from ideological bias. Media must ensure freedom of expression and schools must encourage the freedom of thought. For that kind of twinning, the teacher education for the 21st century must be innovative and relevant.

8. Proposed Innovative Models of Teacher Education

Since the approach of plurality of models has been accepted, therefore, six new full-fledged teacher education models – including the

one envisioned by NCERT have been proposed. An institution may opt for any one alternative model or even more. The option depends upon the utility of the model and the strength of the institution.

Let us look into the issue of proposed innovations in teacher education. The NCTE has published a document giving a list of innovative programmes in teacher education. This document has listed innovations on the basis of the recommendations of our Commissions and Committees in India. In addition to this list, a few additional innovations by some institutions have also been proposed but many of them could not be launched. Some other researchers too have done a similar work.

8.1 Multiple Structure of Teacher Education

While delivering a lecture for NCTE, Behar,[2] proposed nine alternative models for preparing a professional person called - A Personality Psychologist or a Human Engineer or a Behavioural Scientist. The proposed nine structures for teacher education were as given below:

- Education: Seven Years Course of General Education
- Education: A Subject in General Degree Course
- A Paradigm Shift: Developing a Personality Psychologist or a Human Engineer or a Behavioural Scientist
- No Separate Teacher Education Course: Applied Disciplines
- Integrated General Degree and Teacher Education Course
- Broader Course for Several Professions Including Teaching
- Induction Course for Teachers: No Training Requirement Before Recruitment
- De-Institutionalized, Field-Based Teacher Education
- Flexible Approach

8.2 A Teacher Education Model Based on Brain Research

Many philosophers and thinkers have suggested a large number of innovative programmes for teacher education. The list of such programmes is a big one. A few sample examples of teacher education programmes could be task-based teacher education, problem-based teacher education and so on. Likewise, brain-based education is proposed here for consideration to accept it as an innovative programme of education as well as that for teacher education.

The innovation of brain-based-learning is proposed on the basis of new researches. In the light of learning society, this programme is proposed for capitalizing the natural abilities of the brain. New researches have found out a few interesting discoveries that brain-based-learning could be an excellent example for maximizing human development.

These researchers have found that brain has unlimited capacities. And the brain is always ready to learn through informal methods. The formal environment of teaching mismatches with the natural habits of the

brain. The teacher education with informal-cum-formal environment may be more suitable for focused development of the mind. This fine combination coupled with spot selection of formal and informal grouping could be tried out.

The principles of brain-based teacher education are given below:

- Brain is a parallel processor
- Learning engages the whole physiology
- Search for meaning is innate
- Search for meaning is through patterning
- Emotions are critical for patterning
- Parts and wholes are processed simultaneously by the brain
- Learning involves focused attention and peripheral perception
- Learning involves both conscious and unconscious processes
- We have two types of memory: spatial and rote
- We understand best when facts are embedded in the natural, spatial memory
- Learning is enhanced by challenge and inhibited by threat
- Each brain is unique

Who can introduce this model? Maybe some institutions can try to introduce this model. The teacher educators who are trained in the use of dialogue and have the faith in all kinds of formal, non-formal and informal systems of education can try this innovation. Dialogue is one way that satisfies the requirements for integrating formal, non-formal and informal methods of education.

8.3 A Teacher Education Model Towards Creating a Learning Society

Based upon the recent research of organizational development a full-fledged model of an innovative teacher education programme is proposed. This programme is suggested as it goes with the requirement of new schools and, thus, new teacher education. This model will have a major role for the establishment of a learning society.

A learning society would require individuals who are continuously keen to examine and re-examine their goals, their thoughts and their mental models; they must also like to chase the development of their lifelong learning. They have to learn, unlearn and relearn. Learning should be construed around a biographical project where one constructs his/her plans.

Peter Senge and many other thinkers working in the field of learning society think that the processes of education and those of teacher education are to be arranged in institutions "...where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together...". Peter Senge proposes that mastery over the following Five

Learning Disciplines is the basic pre-requisite for this kind of teacher education programme:

i. *Personal Mastery:* This discipline is the practice of a coherent image of one's personal vision – the results one wants to create in one's life – along with a realistic assessment of the current reality of one's life today. This produces a kind of innate tension that, when cultivated, can expand your capacity to make better choices and to achieve more of the results that one has chosen.

ii. *Shared Vision:* This collective discipline establishes a focus on mutual purpose. People with common purpose (e.g. the teachers, administrators and staff in the school) can learn to nourish a sense of commitment in a group or organization by developing shared images of the future they seek to create and the principles and guiding practices by which they have to get there. A school or community, that hopes to live by learning, needs a common shared vision process.

iii. *Mental Models:* This discipline of reflection and enquiry skills is focused around developing awareness of attitudes and perceptions – your own and those of others around you. Working with mental models can also help you more clearly and honestly define current reality. Since most mental models in education are often "un-discussable" and hidden from view, one of the critical acts for a learning school is to develop the capability to talk safely and productively about dangerous and discomforting subjects.

iv. *Team Learning:* This is a discipline of group interactions. Through such techniques as dialogue and skillful discussion, small groups of people transform their collective thinking learning to mobilize their energies and actions, to achieve common goals and drawing forth an intelligence and ability greater than the sum of individual members' talents. Team learning can be fostered inside classrooms, between parents and teachers, among members of the community and in the 'pilot groups' that pursue successful school change.

v. *Systems Thinking:* In this discipline, people learn to better understand interdependencies and change and thereby are able to deal more effectively with the forces that shape the consequences of their actions. Systems thinking is based on the growing body of theory about the behaviour of feedback and complexity – the innate tendencies of the system that lead to growth or stability over time. Tools and techniques such as stock-and-flow diagram, system archetypes and various kinds of learning labs. and simulations help students gain a broader and deeper understanding of the subjects they study. Systems thinking is a powerful practice for finding the leverage needed to get the most constructive change.

Teacher educators must achieve a mastery over these five learning disciplines, and only after that mastery, teacher educators should engage themselves in helping in identifying the problems of education in real

situations. Based upon that chosen problem, a learner, then, can pick up his/her real personal role and his skills for working in teams. Of course, one should understand the problem and also the depth of one's own capacity and role.

In trying to master the required competencies, the team members develop the shared vision. Through skillful discussion and dialogue, one learns about one's own attitudes and belief systems, and examines the underlying assumptions. Then one should study the details, give historical narration of the problem and find out what and how the problem was confronted. Finding the underlying root cause of the problem, one develops causal loops and the feedback system that works. After the solution has been arrived, one writes the details and then makes an in-house presentation. Teacher educators will design and solve the problems too. Some institutions may try this model.

8.4 A Model of Teacher Education Based on the Pedagogy of Dialogue

This model called Dialogue-Based Pedagogy of teacher education is powerful and relevant for correcting a fragmented society. Dialogue creates a holistic pedagogy that works against the approach of reductionism.

The holistic world view has its roots in the new physics, systems thinking and ecology and perennial philosophy. The assumptions of holistic teacher education will be as follows. Some of the sample assumptions are that thought is a product of brain-activity; rather the universe is more like a thought than a thing. One more illustration of the assumption is that the reasoning is not the highest skill possessed by humans; rather reason and intuition are equally valuable skills. There are a few more assumptions about other aspects of learning and training.

In a dialogue, the classroom is envisioned as a site where new knowledge, grounded in the experiences of students and teachers alike, is produced through meaningful interaction. Dialogue involves engaging in a cycle of theory, application, evaluation, reflection and then back to theory.

8.4.1 What is a Dialogue?

The dictionary defines 'Dialogue' as a conversation between two or more people and also as an exchange of opinion or ideas. Dialogue is a famous and an old technique of communication. Dialogue has been used by thinkers of the East and the West like Socrates, Martin Buber, Paulo Freire, David Bohm, J. Krishnamurti, to name some.

Martin Buber has made a significant contribution to the use of encounters and dialogue in education. David Bohm - an eminent physicist and friend of Krishnamurti, whose example and practical proposals for dialogue have met a response from a number of different areas, particularly from those like Peter Senge. The notion of dialogue has been linked as an educational manifestation by Paulo Freire.

The core idea of dialogue is a process of sharing ideas in a safe and happy environment. Dialogue aims at learning about self and also about others' beliefs, feelings, interests, and/or needs in a non-adversarial and an open way. Although the participants may challenge ideas or raise questions, the goal is to create understanding rather than debate with each other. The emphasis is on deep listening. The bottomline is that dialogue must result into some productive outcomes.

Literature says that dialogue is a skillful exchange or interaction between people that develops shared understanding as the basis for building trust, fostering a sense of ownership, facilitating genuine agreement and enabling creative problem solving.

Dialogue has various connotations ranging from opposing adversary culture to nurturing culture. People may know about debate, conversation and discussions that are used in education. But it must be understood that all these techniques have their special purpose and varying meanings.

8.4.2 Dialogue and Discussion

Dialogue is something different from discussion. Discussion has its roots in analysis and breaking the ideas. Discussion is based upon analysis whereas dialogue gives importance to synthesis. A discussion is usually between people who have adopted definite points of view and who wish to convince each other or compare their outlooks. Dialogue is more of listening but discussion is more of speaking. Dialogue demands and uses the art of deeper listening.

Discussion is a multi-way communication with a view to arriving at win-lose outcomes. Discussion involves advocacy, competing, convincing and then deciding by votes or otherwise. Dialogue aims at win-win outcomes. In dialogue, people learn to listen not only to the spoken words but all facets of the views of others in their context. Dialogue is exploring for full synthesis and not necessarily for quick agreement. In dialogue people are supposed to create new understandings which are 'explicitly critical' and aim at action.

Debate is not dialogue but dialogue can use debate. Dialogue is neither chat, nor gossiping, nor information sharing, nor even a small talk carried out with an intention of entertaining, exchanging friendship, and nor even a process of seeking an agreement but rather dialogue is a process of exploration for construction of harmony, cooperation, understanding and creativity.

8.4.3 Dialogue and Conversation

Conversation is different from dialogue. Conversation is a comfortable talk. Conversation looks like a small talk between friends or neighbours. Topics of conversation are comfortable and fluid. Conversation can be used as an exercise of building relationship. In conversation, the participants engage themselves on any subject matter. Seriousness of

topic is less important compared to building social relationship. Conversation takes the form of a gossip if it is prolonged and is without any purpose. A happy thing is that conversation entails concern, trust, respect, appreciation, affection and hope. But dialogue is much more serious and is applied for chronic problems.

Let us know that there are many shades of dialogue. There are five kinds of dialogues, namely Instructional dialogue, Debate dialogue, Conversation dialogue, Inquiry dialogue and Wisdom dialogue. The Wisdom Dialogue is a process of sharing and learning about another group's beliefs, feelings, interests and/or needs in a non-adversarial, open way, usually with the help of a facilitator. The Wisdom Dialogue is skillful exchange or interaction between people that develop shared understanding as the basis for building trust, fostering a sense of ownership, facilitating genuine agreement, enabling creative problem solving and asking basic questions for examining old mental models. The emphasis is on "deep" listening and responding by building on what has been said in order to reach a deeper level of understanding together.

8.4.4 Guidelines for Organizing Dialogue

Dialogue aims at building trust amongst the involved parties. Trust cannot be built by giving instructions. We need to create a culture that must reflect the goal of creating a setting in which individuals feel that it is safe to reveal the thinking behind their thinking. A feeling of mutual closeness is generated among the participants though they may differ widely in various things – views, line of thinking, way of doing things, the belief system and so on.

In dialogue one must be enabled to examine and cleanse oneself as regards prejudices, restrictive belief systems, non-productive mental models etc. One achieves this by listening to the spoken words of others and of self. The aim is not to arrive at a consensus or unification of ideas but to enable oneself to look at one's mental models.

8.4.5 Rules for Organizing Dialogue

- Dialogue members in a group can vary; number can be anything around 10 to 40 so that members can hear each other without mike and speakers.
- Seating arrangement is circular so that everyone can see everyone else.
- Time duration for the dialogue meetings can be according to the members' convenience with all kinds of flexibility.
- Communication is informal and language is simple. How to talk when there is no hierarchical structure in the group?
- How to start a dialogue? How to stay focused? How to save a situation when safety is at risk? How to speak and avoid persuasion? How to turn ideas into habits?

- How to select the topic? Agenda is self-chosen where there is personal concern so that there is full motivation and involvement.
- Who plays the role of a chairperson especially, when all the members are equal?
- Decisions and outcomes are dynamic and evolving.

8.4.6 Art of Using Dialogue

In an environment of dialogue, all the participants freely share their views and thoughts in an informal and safe setting. The following questions are seriously considered :

- How to manage someone who is talking too much?
- How to use talking stick for controlled talking?
- How to overcome hesitation and shyness?
- How to cultivate the culture of care, execute symbolic conduct and improve generative life?
- How to learn the art of deep listening?
- How to avoid looking at someone so that there is no visual conflict?
- How to avoid yes-but game?
- How to avoid anger, conflict, confrontation, pressurizing, too much advocacy, prevailing over the views of others?
- How to avoid external manipulation and unnecessary flattery?
- How to check assumptions, mental models and buried belief systems?
- How to create trust amongst members?
- How to ensure the plans and programmes of development of structural support?
- How to learn five disciplines – Personal Mastery, Shared Vision, Mental Models, Team Learning and Systems, and Thinking through Dialogue?
- How can Dialogue be used in all kinds of formal, non-formal and informal learning environment?

8.4.7 Using Dialogue in Teacher Education

Firstly, let us understand formal teaching-learning in a classroom situation. Formal environment represents strictness of formalities and it consists of fixed goals, pre-determined curriculum, formal teaching-learning processes, standard procedures of evaluation, market driven certifications, business rules of private management and dominance of state level bureaucracy. Many of these formalities do not allow the free use of dialogue for teaching-learning. Some of the examples of formal environment can be: (i) face-to-face learning in a formal classroom, and (ii) distance mode learning and evaluation of curricular subjects.

The teacher educators have to negotiate the formal conditions for

bringing in the much useful technique of innovation like dialogue. It must be understood that it is not easy to use dialogue in formal situations.

Secondly, there is need to understand the situation of a non-formal teaching-learning environment. Dialogue can be used in the settings of lifelong learning and continuous learning through the modes of conferences, seminars, lectures and discussions.

One can learn through the informal mode. The brain learns through all kinds of formal, non-formal and informal environments. In order to arrive at a new kind of education, teachers must learn the use of dialogue in an informal environment.

8.4.8 Using Dialogue in a Formal Setting

Formal education is working in very tight jackets. Formal classroom is curriculum-bound. There are boundaries of space, timings, seating arrangements and even the nature of evaluation. Formal classroom imposes many constraints against the use of dialogue learning. And it is here that dialogue kind of learning is essential to overcome the defects in teacher education. Some innovative work like collaborative learning, group learning and cooperative learning is going on.

Apart from the use of dialogue in school environment, some other experiments are going on at the university stage. Further, an experiment is in progress at Vanasthali in Rajasthan where dialogue is being tried out with B.Ed. students. Results of Vanasthali experiment are encouraging. Inspired by such outcomes another teacher educator of ILVA College of Education in Indore has launched a similar experiment. A new pedagogy in a full-fledged teacher education programme may be attempted.

There cannot be fixed patterns and steps for organizing dialogue in the classroom setting. The following can be the steps of using dialogue in a classroom setting. These steps are – Orientation about Dialogue, Deciding Groups, Declaring Topic and Questions, Disseminating Findings, Drawing Synthesis, Directing Reflection and Evaluation of Learning Outcomes.

Step 1 – Orientation about Dialogue – The teacher sets the stage for the Dialogue by making a quick presentation about the finer details of this approach. Clarifications, if any, are made at this stage.

Step 2 – Deciding Groups – During this step all the students are divided into groups based on the number present. All the students sit comfortably close to one another in a circle, where everyone is able to see and hear peer individuals with ease.

Step 3 – Declaring Topic and Questions – The groups are formed and the members are seated in their respective sub-groups. The teacher presents the dialogue questions related to the learning topic of the day on the board. Time is allotted for each question. Then dialogue proceeds in such a way that every student is active. Every student is enabled to participate. A cyclic mode may be used for

ensuring equal participation. The participation is loud enough so that it can be heard but low enough so that other groups are not disturbed. The teacher acts as a facilitator.

Step 4 – Disseminating Findings – This step takes about 15% of the total classroom period. Each sub-group of the class presents its discussion to the larger group. The students finish the task of dialogue presentation.

Step 5 – Drawing Synthesis – This step takes about 20% of the total time where the groups synthesize the findings of all the questions. The learning principles are drawn. One uses the pedagogy of constructivism to create specific knowledge.

Step 6 – Directing Reflection – This step takes about 15% of the total time and the students in their respective groups reflect on the findings and the points that have been synthesized, which emerged as a result of dialogue among group members. It also churns the minds of the students and new ideas are generated. This is the end of Stage 1 of Dialogue Mode.

Step 7 – Evaluation of Learning Outcomes – This step is about the evaluation of learning outcomes. It is a crucial step for knowing and certifying the utility of the dialogue. Formative evaluation is carried out by the peers and the teacher educator. Formative evaluation is fearless and constructive. They apply the principle of politeness. There is neither fear nor fight. The summative evaluation is the ultimate touchstone for the utility of the dialogue method. It could use various tools and techniques. One can use multiple evaluators.

The above activities have shown the path for the use of dialogue in formal settings of given time-tables, given space settings, given subject allocations and even culture of noisy environment. It has been found that the dialogue group students were proactive. Students did self-study. Students participated in their own evaluation. They also gave feedback to each other. Volunteers from each group were present for the synthesis. After these presentations, the participating students reflected and expressed their feelings. This process came to an end after all the groups presented their synthesized recommendations of that day.

8.4.9 Conclusions about Dialogue

- Institutional leaders need to view a teacher education institution with integrative perspective: (i) education uses formal-non-formal-informal systems; (ii) wholistic learning is brain-based; and (iii) art of dialogue is group learning.
- Dialogue is a skillful exchange or interaction between people that develop shared understanding as the basis for building trust, fostering a sense of ownership, facilitating genuine agreement and enabling creative problem solving.

- Teacher education must introduce the use of dialogue as a full-fledged model of teacher education or at least as a component-innovation.
- Dialogue can be used by all stakeholders of education in a variety of settings like partners of formal, non-formal and informal systems. The formal system will include school systems and teacher education colleges. The non-formal system may include seminars and conferences. The informal system will include family settings, recreation groups, travelling groups.
- Regarding topics of dialogue, one can use subject-topics and/ or informal interdisciplinary contents from life problems
- The outcome of dialogue will be both cognitive development and the development of an affective domain. When action is followed by do-able projects, then psychomotor domain too is covered
- In order to implement dialogue in teacher education institutions we need to develop a format of lesson plans and observation tools and give it a judicious place within the section of practice teaching
- Use of dialogue needs flexibility and patience on the part of trainers.
- It has been found that dialogue can be employed in many other kinds of situations related to teacher education – (i) developmental staff meetings, (ii) parents meetings for eliciting cooperation, (iii) students' meetings for improving learning environment, (iv) community and management for involvement, and (v) organizing conferences and holding seminars for capacity building of teacher educators and researchers.

8.5 A Model of Teacher Education for In-service Professional Development

In the conferences, it is often seen that the conventional approach of paper presentation is passive. The experience has shown that this conventional approach of paper presentation is easier and also more acceptable to the organizers but it is less productive in terms of outcomes.

In conventional approach of paper presentation, the delegates read their papers in a stand-alone format. At the end of a presentation, some discussion is allowed. Usually, during conventional presentations, the delegates doze off. Some delegates go into their own make believe world. Sometimes the delegates leave the room. The outcomes are non-productive. It is often found that sometimes the presenter skips the remainder scheduled sessions. What can we do so that the presenter and the listeners are alert and remain present throughout?

Dialogue Approach (DA) of organizing conferences is the answer for effective development of teacher educators and the researchers. This

approach is much more effective. In DA the delegates act as presenters, as participants and as feedback providers. They remain present for the entire session for all these roles.

New Innovation for Conferences: Dialogue.

The Dialogue creates an open, safe and informal, yet serious environment.

Delegates help in creating collective and meaningful patterns out of diversities of their views.

Listening is preferred to advocacy as the primary principle of dialogue.

The delegates act as presenters and audience too. All the participants act as chairpersons and accept the responsibility of leadership and follower-ship.

8.6 A New Vision Model of NCERT

The innovative vision of Teacher Education by NCERT is titled 'New Vision' not so much because all its dimensions are totally created anew, but it is named so because it proposes a definite 'shift' in approach to teacher education. It is true that there have been earlier attempts, in fact, several of them, to 'review', 'revitalize' and 'restructure' teacher education. However, these efforts could not percolate into actual practice and show the expected enhancement in its field relevance. With this in view, there is a need for change in the 'approach' to teacher education as suggested hereunder.

8.6.1 Contours of the "New Vision"

Teacher education has to become more sensitive to the emerging demands from the school system. For this, it has to prepare teachers for a dual role of – encouraging, supportive and humane facilitator in teaching-learning situations who enable learners (students) to discover their talents, to realise their physical and intellectual potentialities to the fullest, to develop character and desirable social and human values to function as responsible citizens; and, an active member of the group of persons who make conscious effort to contribute towards the process of renewal of school curriculum to maintain its relevance to the changing societal needs and personal needs of learners, keeping in view the experience gained in the past and the concerns and imperatives that have emerged in the light of changing national development goals and educational priorities.

These expectations suggest that teacher operates in a larger context and its dynamics as well as concerns impinge upon her functioning. That is to say, teacher has to be responsive and sensitive to the social context of education, the various disparities in background of learners as well as in the macro national and global contexts, national concerns for achieving the goals of equity, parity, social justice as also excellence.

To be able to realize such expectations, teacher education has to comprise such features as would enable student teachers to:

- care for children/learners.
- understand children in relation to their social, cultural and political contexts.
- view learning as a search for meaning out of personal experience.
- understand the way learning occurs, possible ways of creating conducive conditions for learning, differences among students in respect of the kind, pace and styles of learning; view knowledge generation as a continuously evolving process of reflective learning.
- view knowledge as an external reality embedded in textbooks but as constructed in the shared context of teaching, learning and personal experiences.
- be sensitive to the social, professional and administrative contexts in which they have to operate.
- be receptive and constantly learning; own responsibility towards society and work to build a better world.
- develop appropriate competencies to be able to not only seek the above understandings in actual situations, but also be able to create them.
- have a sound knowledge-base and basic proficiency in language.
- identify their own personal expectations, perceptions of self, capacities and inclinations; consciously attempt to formulate one's own professional orientation as this will determine one's role as a teacher in situation-specific context.

8.6.2 Conceptual and Operational Focus in the Envisioned Model

It has become imminent that teacher education becomes responsive to such expectations. This is possible through a basic shift in focus to be brought about in TE. This would mean an entirely new direction to be taken for which we should be able to develop necessary conceptual and operational details. Having done so, the existing knowledge and practices could be examined for their suitable inclusion, alteration or even discard. Significantly, such a new approach to TE needs to have some distinct conceptual and operational focus on several aspects. Major ones are dealt with one by one.

(a) Learning

Learners experience learning through active involvement and participation. By doing these, they 'construct' their meanings and ideas, or, in short, knowledge, in their own ways. Therefore, learning is a process

of source searching, collation of ideas, reflection and analysis and internalisation. This is greatly influenced by the social context from which learners come.

Learning is a divergent process that occurs through various exposures and not necessarily through a common, singular exposure pre-decided by teacher. It is essentially a participative process in which learner constructs knowledge in one's own ways, through absorption, interaction, observation and reflection. In the process, the learner goes back and forth. The process, therefore, is not linear; it is rather spiral and complex in nature.

(b) Learner

As the teacher's role is essentially in relation to learner and learning, the central focus of teacher education has to be on learner and learning. Learner has to be seen as an individual with unique potential and living in a socio-cultural context. In this sense, learner is more than a psychological entity, is a vibrant participant in a context. He or she wishes to be an effective participant in the context and also to contribute towards its improvements. Learners recognize meanings from their social, cultural contexts, develop attitudes, begin to understand and interpret phenomena in their own ways, based on personal experiences.

Learners vary in respect of the kinds of learning, style and speed of learning. Given the same conditions, they learn differently. This process is much more than psychological. Teachers need to be able to discern the actual learning in learners, find ways of facilitating it without being prescriptive or without restricting learners' 'learning routes'. Teacher education must enable teachers to appreciate the learning variations among learners and also that it is a dynamic process.

Thus, learners will be active, collaborative and aware of their purposes, strategies and context and will also be responsive. Here learner's ability is not seen as a fixed but capable of development through experiences.

(c) Teacher

The key role of teacher is as a facilitator and a support to ensuring learning. Teacher is the one who facilitates learners to realise their potentials, articulate their personal and context-specific experiences in ways that are acceptable in the wider context of our nation.

Teacher has to recognize that in a learner-centred situation, curriculum 'evolves' and is not 'pre-designed'; teacher is merely 'prepared' for providing possible supports in the process of learning. Every subsequent learning situation cumulatively provides better insight to teacher in discerning learner needs and creates pool and identifies varied learning supports. In this sense, teacher is a participant in the learner's efforts at evolving learning experiences and helping to develop programme for learning.

There is no one 'method' that is effective in causing all learners to learn in similar ways. Each teacher has to find one's own 'style' of learning through perceptive practice but recognize the fact that all learners learn in their own ways. 'Teaching method', therefore, has two aspects for assessing its effectiveness or appropriateness. One pertains to teacher's style with which she uses method or methods. It relates to one's own rationale. The second is the learner's (school students) way of learning. The participation in unique ways speaks of the role of teacher and learner in the pursuit of knowing or learning. While both teacher and learner participate in learning situation, they are beneficiaries. Acquisition of learning on the part of the student has been a major concern in educational situations. In this sense, technically, both of them are learners.

Teacher needs to recognize himself or herself as a 'professional' endowed with the necessary knowledge, attitude, competence, commitment, enthusiasm, spirit of seeking new ways and means, capable of reflection, sensitive and perceptive not only to the learners and the institution but also to the emergent concerns in the larger social perspective within which one functions.

Teacher has to recognize that learners in schools no more need teacher as a source of knowledge. The media explosion challenges their minds with the immense learning choices and possibilities. Facilitating meaningful and positive learning in the face of unprocessed information is unavoidable to a teacher. Disparities in access to such a powerful medium are bound to persist for some more time in this country. Teacher needs not only competence to be effective in situations with and without access to ICT, but also the sensibility in leading young learners to understand and accept the situation in a proper context.

Teacher must develop an understanding of the nature and dynamics of 'action' comprising education. Such an understanding would not be a cognitive acceptance of things that occur but will prompt attempt to 'do' things, contemplate on 'what works and does not work', and critically analyze the pros and cons of the action, reflection and internalisation. That is why learning in TE 'readies' one for action independently.

Terms like teaching and teacher in their earlier meanings need to be altered, if learning has to take the centre stage in TE. That is, teaching has an underlying tone of 'what a teacher does'. This is suggestive of the learning being an outcome of teaching which is central. Change in visualizing teacher, teacher actions and teacher preparedness in a situation wherein learning goes on in learner specific ways, in various levels, speeds and styles but simultaneously, has to be developed.

It is visualized that providing for learner autonomy will ensure the stage appropriateness of every learning experience. No doubt, the teacher educators need to be oriented to participate in such a learning situation. Also, they need good ways of organizing the daily routine during TEPs.

Teacher educators must not only understand the paradigm shift but also "own" it. This requires well thought-out orientation programmes where

they get an opportunity to discuss and understand their role alterations as well as become equipped to deal with learner dominant situations.

There are a variety of school systems in our country with distinct features and purposes. Yet, they share the broader goals of different stages of school education at the national level. Teacher has to be familiar with these variations and the corresponding expectations. This ensures readiness in a teacher to adjust effectively in any of these school systems and function relevantly.

(d) Knowledge

Knowledge component in TE is derived from the broader area of the discipline of education and it needs to be represented so. It is thus multi-disciplinary in nature within the context of education. In other words, conceptual inputs in TE need to be articulated in such a manner that they describe and explain educational phenomena – actions, tasks, efforts, processes, concepts, events and so on. In doing so, concepts from cognate disciplines may be used but need to be integrated for arriving at composite understanding of educational components. For instance, different theoretical viewpoints of learning, which are essentially drawn from psychology, need to be seen as providing a conceptual basis to teacher in understanding how learning can be understood, discerned, recognized and, more importantly, how it can be caused. That is, understanding of how a given conceptual position a teacher takes and influences teacher decisions about creating learning situations is helped by these theoretical explanations. Similarly, the ever-changing socio-economic-political perspective in the society influences not only the teacher's perceptions and convictions but also the views and reactions of learners. Such interactive forces may be understood better with the help of sociological and political perspectives. The point of significance is that while formulating knowledge components for teacher education, conscious effort needs to be made to represent explanations from the perspective of education rather than of other disciplines with 'implications to education'. Instead, attempt must be made to shift from the usual 'theory to practice' to 'practice to theorisation'. Knowledge in TE comprises of various kinds, e.g., conceptual, technical, professional etc. Differentiating knowledge components in TE would clarify for the beginner, i.e., the student teacher the educational perspective in which to understand one's working as well as make learning during TE more meaningful and feasible.

Such a scheme would provide for adequate scope for viewing theoretical understanding and its practical aspects in a more integrated manner rather than as two separate components. This enables the teacher to develop a critical sensitivity to the field practices, the ones which are tried out and lead to evolving one's own vision of an ideal learning setting and put forth effort to create it. Teacher, thus equipped, would be an asset in creating better learning climate as (s)he would not mechanically accommodate and adjust to existing conditions but would try to improve

upon them and also possess the necessary technical know-how and confidence.

(e) Social Context

Learning is greatly influenced by the social environment/context from which learners and teachers come. The social climate of the school and the classroom exert a deep impact on the process of learning. Given this, there is need to provide a major shift from an overwhelming emphasis on the psychological characteristics of the individual learner to her social, cultural, economic and political contexts. Different contexts invite differences in learning. Learning in school is influenced and enhanced by the wider social context outside the school. Learning does not take place only inside single institute designed for that purpose. When learning outside is connected with learning inside school, it can be hugely valuable.

Learning is to be appreciated as occurring in shared social and everyday contexts. Ordinarily, many of the ideas expressed by educational thinkers such as Gandhi, Tagore, Gijubhai, Dewey and others are studied with virtually no reference to the socio-historical contexts in which they developed.

Teacher education programmes need to provide the space for engagement with issues and concerns of contemporary Indian society, its pluralistic nature and issues of identity, gender, equity and poverty. This can help teachers to contextualise education and evolve a deeper understanding of the purpose of education and its relationship with society

(f) Appraisal

It is necessary to understand that appraisal of learning is equally a dynamic process with adequate sensitivity and flexibility to gain appropriate estimation of 'actual learning' by individuals.

Appraisal in New TEP is continuous. Teacher educator evaluates student teachers' ability to cooperate and collaborate, investigate and integrate, also appraises written and oral skills and originality in approach, presentation and so on and so forth.

Several kinds of appraisals take place in the form of self-appraisal, peer appraisal, teachers' positive feedback and formal evaluation at the end of the year. All appraisals aim at improvement, understanding one's own strength and weaknesses, to understand what has to be strengthened and identify the next goals in the learning process.

The appraisal mostly will not be in marks (Quantitative) but on a scale (Qualitative) wherein students' achievements are evaluated on a continuum and he/she is placed according to his/her performance in various activities.

8.7 Some Issues for Innovative Teacher Education

Is India aspiring to become: (a) a developed nation, or (b) an

enlightened society, or (c) a knowledge society or (d) a learning society? Does Indian Constitution act as a guiding pillar for teacher education? Are there other guiding pillars like – nature, society and individual learners? Are we being guided by our education commissions for directing our teacher education system? The National Knowledge Commission wants India to become a knowledge society. Should we go in for a knowledge society or a learning society? We must consider such questions. The following points will help us ponder over these questions.

- *Aims of Education* – Education aims at drawing out all-round development of a child. Teacher education system too believes in this paradigm. To draw out the best, the teacher education system has to provide a variety of activities for holistic development.
- *Scope of Teacher Education* – Teacher education must stop to look at a student teacher as a routine student teacher. Teacher education programmes must stop to look at a student learner as a routine learner. These learner trainees must master manifold tasks – (a) how can I train myself for achieving learning facilitation in my teacher education programme, (b) how can I learn to create the required learning environment for the school children, and (c) how can I learn to create required supporting environment in the homes and the society?
- *Formal and Informal Systems* – Education is a broad-based process that consists of formal and informal activities. Education is a lifelong process of human development. This process acts at individual levels and guides us for group activities. Formal education process is consciously designed. Informal education process is spontaneously emerging but it is much more important. Both these processes are complementary and need to be integrated. The concern is – how should teacher education learn to guide the integration of formal and informal systems of education?
- *Paradigm of Four Pillars* – Teacher education has to create a new paradigm based upon the four pillars of education – learning to know, learning to do, learning to live together and learning to be. To become a learning society, teacher education has to include the spirit of 3H – head, heart and hand.
- *Re-engineer Courses of Studies* – The teacher education programmes must look into the historically popular requirements of foundation courses, controls of content-cum-methodology courses, the dictates of school subjects and so on. If need be, teacher education must be re-engineered.
- *Liberate from Competition* – Teacher education must liberate itself from the tyranny of competition. It must aim at creating an environment of cooperation, collaboration and compassion.

Competition alone is not healthy. Cooperation and collaboration will create an innovative society, but a three-fold package of cooperation, collaboration and compassion will create an ideal society of the future.

- *Paradigm of Dependence-to-Independence-to-Interdependence* – Teacher education must gradually shift its emphasis from dependence-to-independence-to-interdependence. Teacher education has to urgently decide to overcome the lethargic habit of dependence, to be free from the habit of arrogance of uncontrolled independence and must understand the importance of interdependence. Whatever the kind and level of choice, our teacher education system has to play its role proactively and deliberately.
- *Curriculum to Deal with Complex Negotiations* – Teacher education must negotiate through the given limiting culture of homes, domination of limited pursuits of school subjects, on-going development of market model of realities, compulsive onslaughts of political dictates, and short-term choices of economic goals.
- *Innovation of Collective Learning* – Teacher education must create an environment of innovation of collective learning. The desired teacher education must balance between conflicting demands while using new innovations.
- *Harmony with School Curriculum* – The requirement of constructivism of National Curriculum Framework (2005) of NCERT must be a guiding pillar of teacher education. Work-based education has to be outlined right inside the teacher education programmes. Innovative teacher education must think critically with the head, must work with hands and learn to feel compassion with the heart.
- *Seamless Continuity of Pre-Service and In-Service* – Teacher education system must have a seamless continuity that will address the needs of pre-service and in-service teachers; the division is artificial. The administrative arrangements must look to the needs of interdependence of teachers and the requirements of the system.

Reference and Notes:

Passi B.K., Tyagi S.K., Gupta C. (1992) *Personalized Teacher Education : Lending Flesh to an Idea,* a monograph, Indore, IOE, DAVV

Notes 1-2 While giving one of the very first lectures of NCTE in Assam, Behar, S.C. (1996) proposed alternative models and approaches in his comprehensive paper for teacher education 'Empowering the Under-Privileged – The Case of Teacher Education'.

Chapter 6

Information and Communication Technologies in Education: Implications for Teacher Education

M. M. PANT

1. Introduction

It is said that the Internet and allied technologies which are at the core of the present Information and Communication Technologies (ICTs) change everything. The most visible example is the case of banking, where after the initial resistance, computers came in at the thin end of the wedge as Advanced Ledger Posting Machines (ALPM), but have over time totally transformed the banking sector with ubiquitous ATMs and internet banking. Some initiatives have also been made with mobile banking applications.

In many other areas also, ICTs have made a transformational effect, with the emergence of business process re-engineering, business process outsourcing, now moving towards knowledge process outsourcing, with sub-sets of legal process outsourcing, clinical research and several niche areas in accounting, publishing, animation and gaming.

The purpose of this paper is to look at how the teaching-learning process and systems are being transformed and will further transform in the future as a result of the recent and emerging technologies and their convergence.

There are typically two opposite approaches towards ICTs in education. One is the hype propagated by technology vendors who push a notebook on every child. On the other hand are the skeptics who are quite disillusioned with some of the 'Titanic' like failures in very expensive and often government funded initiatives in rich economies of the US. The Western Governors University and UK (The e-University) would like to question the wisdom of this approach.

This paper suggests a balanced approach between the two extremes and examines the areas where education faces challenges that can be suitably and effectively responded to by the ICTs. The most important of these are the challenge of numbers, the challenge of quality and the challenge of access. While at first sight computers appear as a means of augmenting access, they immediately create not only a 'digital divide' but also a 'language divide' and an 'economic divide' between those who have access to the latest platforms and those who struggle with earlier 'obsolete' platforms.

Begin from the very beginning. If ICT and allied technologies is the answer, then what is the question? If they are the solution, then what is the problem that they could solve? Several national initiatives including the National Curriculum Framework (2005) have been addressing themselves to the challenges faced by the Indian education system and especially, at the critical issue of having adequate number of the right kind of teachers.

This paper supports the position that almost all the articulated challenges and suggested recommendations are capable of being addressed by implementation of the right technologies using the appropriate instructional design and the right training and management. Also some innovative ideas have been suggested drawing upon the general transformational effects of these technologies as have been observed in other contexts.

The National Knowledge Commission has made a number of recommendations indicating how ICTs can play an important role. Some of these are extracted and reproduced here for immediate reference as they are relied upon to develop the possible approaches to action:

- There has to be greater flexibilities in the modalities of teacher training. Diverse strategies such as greater use of ICT, visiting trainers and empowering local trainers who would visit schools should be encouraged.
- The teacher training course should not be seen in terms of a finite period of time but as a process by which the quality of teaching and learning in the classroom can be regularly improved in a context that fosters an attitude of lifelong learning. Therefore, there should be a mechanism for feedback and subsequent interaction between teachers and the training institutes especially, for pedagogical techniques that are new or require more continuous innovation from the teacher.
- There is need for curricular reform both in pre-service and in-service teacher training. The curriculum should be framed in ways that are directly relevant to teachers and the requirements of particular classroom situations such as multigrade teaching, special needs of first generation learners, etc. This means that curricula should be formed with greater inputs from teachers

themselves and their practical requirements in the classroom.

- ICT must be incorporated more fully into teacher training programmes, which, in turn, lead to ICT being used more freely in the classroom.
- A tracking mechanism for all school children should be set up, to check their individual school going status and progress in school. This tracking should cover both government and private schools. This would ensure universal access for children in all locations as well as for girls and specific categories. A tracking system will also facilitate checking for drop-outs and related problem and allow for speedy intervention to address such problems.
- There is a need for a national body to monitor the quality of both government and private schools to ensure that minimum standards are met in terms of learning outcomes.
- New technologies, especially but not only ICT, should be used as much as possible to reduce costs, enable more effective use of resources and provide wider exposure to students and teachers.
- The use of ICT as a teaching and learning device needs to be more firmly incorporated into the classroom. Both teachers and students need to be far more familiar with ICT and get practical experience of web based research. Therefore, ICT should be made more accessible to teachers, students and administrators for learning, training, research, administration, management, monitoring etc. This requires the provision of more facilities such as computers as well as connectivity and broadband facilities. Computer-aided learning also requires training of teachers and other staff in order to make the best use of technology.
- There is a need for a web-based portal for teachers to exchange ideas, information and experiences. A forum for teachers needs to be developed where they may interact, share experiences and ideas. This needs to be incorporated into teacher training programmes and also provided generally for in-service teachers. A web-based teacher's portal can play an important role as such a networking forum.

The Working Group Report on Elementary Education and Literacy for the 11th Five Year Plan (2007-12) also puts a special emphasis on technology in teacher education and its relevant recommendations are quoted below :

> "The central aim of introducing technology in education is to develop and promote openness for new thinking in an atmosphere of innovation through introduction of methods that are interactive, away from the usual text, away from the chalk and talk, enjoyable, non-threatening and self-paced. Integrating ICT into teacher education is

also necessary for bridging the digital divide between government and private teachers, rich-poor, urban-rural, by providing opportunities to effectively use technology to further educational objectives. The central theme of the deployment of technology in teacher education is transforming institutions of teacher education including SCERTs and DIETs".

The same document also notes that the recent constitutional amendment to make education a fundamental right for all children in the age group 6 to 14 years poses exceptional challenges for teachers. The more recent actions of the government demonstrate a clear mandate towards universalisation of education till the secondary level as well.

The National Knowledge Commission also emphasises that the dignity of school teaching as a profession must be restored and at the same time there should be transparent systems for ensuring accountability of school teachers.

The Right to Information Act, the Consumer Protection Act and an active judicial response are also working towards pressure on the government administered school system to regain a lost glory, when say about 50 years ago, the government schools by and large were much better than the private schools, including the so-called missionary schools in terms of quality of teachers employed and the level of education imparted especially in science and mathematics.

It is interesting to note that while the challenges are many and along many different dimensions, it turns out that the developments in computer and communication technologies, especially the recent convergences between data, voice and audio and the emergence of web 2.0 provide solutions to these problems and the possibilities of totally transforming the education towards achieving the desired goals. These allow teachers and learners to communicate in a manner that many of the earlier limitations are overcome and result in a superior learning experience for a larger number.

2. Recapitulating Past Instances of Impact of Technology on Teaching-Learning

The standard teaching model is the 'sage on the stage' model adopted by the earliest preachers. This model predates the printing press and, therefore, the pupils took copious notes in their handwriting of what the all-knowing teacher had to offer, whether it was his own wisdom or knowledge gathered from his peer group through articles or letters exchanged, or acquired at face-to-face gatherings and discussions amongst learned persons, pushing the frontiers of knowledge in their specialist areas. Thus, great centres of learning were established at specific geographic locations and were supported by their patrons, which were kings or rulers. The advent of Gutenberg's printing press changed much of this, and although the first publications were copies of the Bible, soon

there emerged copyright laws and the availability of textbooks led to courses of study being organized around textbooks and textbooks being written for courses of studies. The ability of low cost copying machines proved to be a great boon for easier availability of content and afforded opportunities for teachers to create a compilation of readings culled out from various publications. A fair use policy principle of copyright law allowed this practice to flourish. While this allowed far greater dissemination of written text material, when the radio was available for consumer use, it was thought to have a great potential to reach the voice of the teacher over large distances. The popularity of the audio-cassette player and the success of the Sony Walkman (comparable to the success of the Apple iPod) threw open possibilities of students listening to their teacher's lectures while on the move. The epi-diascope at one time and the overhead projector for transparencies (acetates) later proved valuable teaching tools for whole class teaching. All these transformations happened slowly over a relatively long period of time.

When movies arrived, the television became popular and VHS tapes were as commonplace as audio-cassettes sometime before, some eminent persons ventured to predict that textbooks would disappear and would be replaced by VHS tapes. But this too did not quite happen. And when Skinner's programmed learning did not quite succeed with 'programmable computers' which were programming everything from inventory to payroll to financial models, it looked almost clear that the distractions of new technologies have but a minor effect on transforming the well known models of education. But once the PC had been created and Moore's law continued to be valid for decades, significant changes were possible and with emergence of the Internet and the convergence of new media and technologies, education could no longer remain insulated from progress in technologies.

3. Recent Paradigm Shifts

Computers and the Internet have had a huge impact on the entire education system. More and more educators are exploring the integration of the Internet in their classrooms and curricula. But caution needs to be exercised when implementing computers and the Internet as a teaching tool due to their possible counter-productive influences.

Certainly, computers and the Internet can facilitate effective transaction of the curriculum. However, it is crucial to be aware of the messages that use of computers and Internet convey to students. After all, we know with certainty what common sense told us before: that computer use for a young child should be, at most, a small part of a complete nutritious diet of activity. If our education system comes to a point of over-reliance on computers and the Internet, without teaching students to critically analyze Internet sources and enriching their education with diverse experiences, it may give rise to a generation rich in data,

facts, and information but lacking in the ability to make sense/find meaning in the vast amounts of information. The beneficial aspects of using ICT in education should not override the larger goal of education to nurture healthy, functional citizens.

There are many ways in which the modern future classrooms differ from the traditional classrooms. Some of the salient features of this transition involve a movement from :

- Traditional classroom **to** desired classroom
- Factory model of industrial age **to** digital classroom of the information age
- Teacher-centred **to** student centred
- Time-based **to** outcome-based
- Focus on memorization of discrete facts **to** what students know, can do and are like, long after they have left school
- Lower level of Bloom's Taxonomy **to** its upper levels
- Textbook driven **to** resources driven
- Passive learning **to** active learning
- Individual learning **to** collaborative and team learning
- Little or no student freedom **to** almost unlimited freedom for students to explore and construct learning
- Very limited options and pathways **to** personalized and customized learning pathways
- Limited close-ended assessment methods **to** open ended ability assessment through evidence and portfolios.

This transformation will be possible, if amongst other actions that are taken, there is a fundamental shift in the way the efficiency and effectiveness of teaching-learning processes is measured. The term learning matrices may be used to describe various measures that can enable a more effective assessment of the effectiveness of learning interventions and the progress in the achievement of the learning goals. It is now well accepted that only that which can be measured can be improved. Not that non-measurable things cannot be made better, but improving them in a predictable manner, following a road map that can be agreed upon by the major stake-holders is difficult.

When we look at how education is managed and the activities related to learning achievement are organized, we realize that there is very little usage of a measurement-based approach. Of course, students are regularly assessed, given marks and grades and several statistical tools deployed by way of normalization, but, by and large, the reliability of the assessment methods and the meaning that can be drawn from it are of limited use.

The current model puts more premium on talent, rather than on the development of talent. The current model may be described as one of a tribal existence, where there is total dependence on naturally occurring talent in students, and naturally occurring talent in faculty and it is hoped

that good institutions will be a magnet for both. This model has produced islands of excellence on certain occasions in the past, but they have been invariably not sustained for more than three decades or so, till the naturally occurring talent migrated or retired.

So, what is a naturally occurring good learner? He or she is a self-learner who understands how to construct learning from the resources and experiences that are provided to him/her. There was a time when many students of physics and mathematics would get selected with very high ranks in the civil services examination, while choosing an additional subject like history, sociology or international law, a subject that they had never studied at senior secondary or university undergraduate level. In recent times, several IIT graduates are doing similar stuff. The point is that these students had learnt to learn and could then change from pursuing one subject to another. It is as if once one had learnt to drive well one could drive in a completely new town as long as one had mastered the art of safe driving, rules of the road and read maps and road signs.

And now when we look at the learner side, we need to be able to measure the differences between the learners in more useful terms rather than information recall and rote learning. Adopting the methods of mastery learning, it would be possible to teach to agreed common targets everything that needs to be taught. But if we want to empower learners to construct their own learning, then we will need metrics for learning rates and learning styles and the quality of their learning, whether fragile or otherwise. The goal of a learning intervention would then have to be a change in learner momentum. This may look impossible to traditional educators, but in another similar field, namely software development and services, this has been done and without it, the Software Industry could not have been where it is. From writing programmes for the love of it, and not even wanting to see the code of colleagues, we now have a whole discipline of software engineering and software product management, of which software metrics and productivity measures are well accepted. The contributions of the Software Engineering Institute at the Carnegie Mellon University in this regard are notable and can be an example to emulate. Maybe fields like Courseware Engineering, Learning Kinematics and Educational Informatics will start to develop.

4. ICT and Changing Profiles of Training Methodologies

The 'sage on the stage' model of education continued to be used for all areas of instruction and training. In science subjects, special laboratory sessions were introduced, studios were introduced for art, design etc., and in professional medical education, an entire hospital was required to become part of the training of the doctor or the nurse. The dominant assumption was that subject expertise was critical and most important. At the training for school education, exposure to pedagogy and 'practice teaching' were organized but no serious attempts were made to teach instructional design or train teachers to fulfil a variety of roles that they

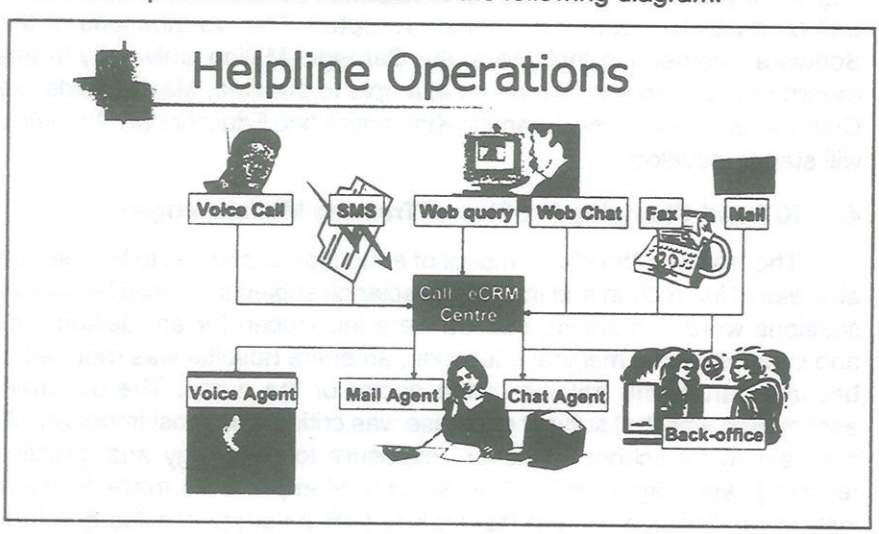
may have to perform as part of their work. If the teachers have to respond adequately to the suggestions made in the NCF (2005), then they have to transform to active teachers as much as the learners have to transform to active learners. They are then not just conduits for conveying specified pieces of information but have to take responsibilities for identifying resources beyond the suggested textbooks, create an engaged learning experience and implement assessment to seek evidence of the learners capabilities rather than observe the stress-handling capabilities of the learner in a highly stressful examination.

We need to develop new methods of skilling and re-skilling school educators to adapt and adopt to the changing faces of technology but in such a manner that they can be effective in a traditional classroom that is not technology empowered? To expect that all students in all classrooms all over India would have access to state of the art ICT is clearly unrealistic.

But teachers in large numbers can be trained to support learners who learn even in a non-ICT enabled environment but still impart higher order thinking skills as well as a creative and innovative approach to construct their knowledge.

Acknowledge that the traditional models of training in small numbers and taking decades using a trickle down effect to reach the full target group is not a good option. That new approaches based on satellite technologies, Internet and web 2.0 technologies and integrating mobile devices into the design is critical. A standard monolithic programme should be replaced by a large number of small modules. With multiple entry and exit possibilities, the idea of nano-learning, learning in small chunks delivered over 3 to 10 minutes may be introduced.

A Professional Support Network with help-desk may be established which continually mentors all educators. A help-desk support system which has experienced teachers and a team of assistants, to work with them, could be implemented as reflected in the following diagram:



Educators have to be guided on effective use of these new tools that focus on learning activities rather than content delivery or general learner management. The educators need to be familiarized with webagogy or how learning is effectively imparted using the power of the web, with emphasis on co-operation and team teaching and learning. New assessment methods which are open and transparent need to be introduced and the RTI requirements without learners and their parents even asking for it should be complied with new quality measures and learning metrics may be developed so that teachers can have the satisfaction of good teaching and demonstrate their achievements through well defined measures.

5. Infrastructural Requirements at Teacher Education Institutions for Effective Impact

Technical equipment is no longer the main problem of integrating ICT in school. Greater challenges are in the daily operation and support of ICT infrastructure in schools, ICT education and training of teachers and the effective promotion of ICT use in class. This is largely due to:

Lack of professional ICT support;

Insufficient ICT know-how of the teachers; and

Ignorance of how to integrate ICT in the class.

To attain this goal, the focus should mainly be on teachers and not so much on pupils, because equal opportunities in ICT do not only mean access to ICT infrastructure but also access to an e-literate teacher. Experiences show that only teachers who are familiar with and enthusiastic about personal ICT use will integrate ICT into their lessons. With these goals in mind, an ICT infrastructure set-up with the following elements is recommended:

One notebook for every teacher: A notebook should be a standard tool for every teacher in an information society. As a consequence notebooks should be placed at the teachers' disposal by the government.

One notebook pool for every school: In addition to personal notebooks for teachers every school is equipped with a notebook pool consisting of adequate notebooks.

One pool with peripherals for every school: Every school is equipped with one pool with several peripheral devices (printers, scanners, digital cameras, projectors).

Five per cent professional support per notebook: Teachers should concentrate on using ICT in class and not have to maintain the underlying technology.

Wireless internet access for all school buildings: To increase the mobility in classrooms even when connected to the internet,

wireless LAN (IEEE 802.11b) should be installed in all school buildings.

A compulsory ICT education for teachers: Teachers not only have to learn the handling of ICT but also the possibilities and problems of integrating ICT in class.

A new position of an ICT facilitator: For teachers, learning is not finished after the initial training. As an important part of our concept, the position of an ICT facilitator is being suggested whose task is to motivate teachers, provide further pedagogic assistance and examples of integrating ICT in class.

A USB flash/pendrive for each child: For each child it is suggested that a USB flash drive may be given where a whole lot of learning resources in various media formats are available and the child will be able to create a personalized unique learning experience suiting his or her learning style and interests. He can access computing resources from any networked computer that is accessible as part of several of the e-government initiatives that are being put in place.

For some teacher education institutions, there should also be possibilities of teachers exploring the use of computer/video games for teaching. Apart from the training module, which is suggested in the list given elsewhere, game modules must also be provided such that the teachers have direct experience of using them. Gaming console such as the Microsoft Xbox, the Sony PS3 and the PSP and the Nintendo Wii are suggested as part of the institutional ICT Infrastructure.

6. Best Practices and Lessons Learnt

In the past pre-computing technology era, teachers were expected to speak clearly and loudly so that the farthest learner in the class could hear and write on the blackboard legibly and in a large enough size that could be seen from the last row. Drawing diagrams in geometry, science and similar disciplines was also a requirement. Being able to use coloured chalk to highlight and emphasize information so that they could be cognitively linked, intuitively pre-dating the concepts formally articulated as mind maps by Tony Buzan. Being able to create mnemonics as aids to remembering and being able to prepare the learners to cope with the tasks expected of them in the final external examinations was an added expectation. Towards all this, the teacher had to be able to engage all the learners in the class through eye contact and some use of authority to discipline. Sometimes this would have led to repressing the opportunities to ask questions. Also, the possibility of creating an individualized learning experience for each learner would practically remain unrealizable. There would also be only minimal opportunities for enhancing learner motivation.

Learning logs and tracking systems: Making effective use of a learning log can help focus on learners identifying their learning needs with their teachers. It provides a mechanism for recording the teaching they have

received; how they have practised the skills they have acquired; and when they have been able to demonstrate their competence. The learning log also acts as an important means of recording a learner's progress and development.

There are three stages in the use of learning logs:

The first stage is 'Identified Learning Needs'. Here the learner can log any training needs in discussion with their teacher. The second stage is the completion of training and the use of the Practice Log. At this stage the learner records when they have practised the skill or demonstrated the knowledge they gained from the training. The third stage in the process is the use of a Competency Log. Once the learners have demonstrated their skill and knowledge to a competent level it is signed off by their teacher.

Learning logs are recognized as an important part of the training process. They provide:

- a means for learners to identify their training needs;
- a mechanism for co-ordinating on- and off-the-job training;
- a record of the training learners receive;
- a method of recognising the skills and knowledge that learners have acquired;
- a record of competencies that have been achieved; and
- increased levels of achievement for learners.

Many of the limitations of traditional group classroom teaching can be overcome by use of current and emerging technologies. It is no longer acceptable for educators to be technology illiterate. Before a teacher can successfully leverage these technologies for a better classroom experience, all educators would benefit from acquiring competencies in the following skills and technologies:

The content for the ICT training module may include:

- Word Processing Skills
- Spreadsheets Skills
- Database Skills
- Electronic Presentation Skills
- Web Navigation Skills
- Website Design Skills
- E-Mail Management Skills
- Digital Cameras
- Computer Network Knowledge Applicable to School Systems
- File Management and Windows Explorer Skills
- Downloading Software from the Web (Knowledge including eBooks)
- Installing Computer Software onto a Computer System

- Computer-Related Storage Devices (Knowledge: Disks, CDs, USB drives, zip disks, DVDs, etc.)
- Scanner Knowledge
- Knowledge of PDAs

So, we are about to embark on this globally connected 24x7 business at the speed of thought knowledge economy, with long monolithic courses, but these must give way to shorter courses in the future. Some Institutions have started offering one credit courses to be able to make more effective use of visiting colleagues and have them deliver a set of 15 lectures over three to five days of their visit. Taking the principle further to make every such learning event countable, the author has gone ahead and created a concept of fractional credit course content and given them suitable descriptors. Some of these are tabulated below:

S.No.	Descriptor	Credits	Duration
1.	Short Learning Object (SLO)	0.001	54 seconds
2.	Granule	0.005	4.5 minutes
3.	Re-usable Learning Object (RLO)	0.01	9 minutes
4.	Sachet	0.02	18 minutes
5.	Nugget	0.025	22.5 minutes
6.	Capsule	0.05	45 minutes
7.	Session	0.01	90 minutes
8.	Unit	1.0	15 hours
9.	Course Module	3 to 6	45 to 90 hours

7. Disruptive Possibilities in Transforming Education

In a recent book, "Disrupting Class" published in 2008, Clayton M Christensen, Professor at the Harvard Business School with his colleagues Michael B. Horn and Curtis W. Johnson have looked at innovations in school teaching-learning models as the solution to the problems faced by schools. They emphasise that importance must be given to the fact that students may have 2 to 3 well developed intelligences from the Howard Gardner's eight types of intelligences, namely Linguistic, Logical-mathematical, Spatial, Bodily-kinesthetic, Musical, Interpersonal, Intrapersonal and Naturalist. Also all learners may have different learning styles as well as different learning rates. They have suggested how a student-centric system can be developed building on these ideas and breaking away from the traditional monolithic single size for the entire delivery of teaching and teacher training.

The central theory of Christensen's work is the dichotomy of sustaining and disruptive innovation. A sustaining innovation hardly results in the downfall of established companies because it improves the performance of existing products along the dimensions that mainstream customers value.

Disruptive innovation, on the other hand, will often have characteristics that traditional customer segments may not want, at least initially. Such innovations will appear as cheaper, simpler and even of inferior quality, if compared to existing products, but some marginal or new segment will value it.

The disruptive innovation in education is not m-learning, e-learning or any manifestation of online education, but the increasing expectation that our children/students will have a customized educational experience. This makes a lot of sense, since having watched the ed tech world for some years now, it's hard to imagine a "technology" (even one as compelling as online education) motivating educators or parents to dramatic change. On the other hand, a shift from the industrial model of schooling to one that is more responsive to our individual children does seem like an unstoppable force, since increasing parents' expectations for the education of their children carries huge motivation and power.

8. Mobile Devices and Teacher Training

The use of mobile devices for learning, or M-learning as it is being called, is the system of using mobile devices supported by a wireless infrastructure. Most of the current literature on m-learning points towards the same strengths and weaknesses that occur in the more mature e-learning communities. There are, of course, many similarities between e-learning and m-learning and it can be said that they represent a continuum based on the deployment of ever-more sophisticated technologies.

There is relatively common agreement that multi-purpose hand-held devices such as personal digital assistants (PDA's) and cell phones will outsell PCs and laptops in the very near future within the global community. Tablet PCs are becoming fully powered personal computers with strong potential for m-learning and there is now a lot of speculation on the development and potential application of wearable devices. There is a general consensus, however, that many obstacles exist in terms of implementing any significant m-learning applications, based on current mobile technology capacity. These obstacles can be summarized in the following form:

- Limited memory and storage are major inhibitors.
- Screens are generally too small for the use of any sophisticated applications.
- Intermittent connectivity is a major barrier.
- Cross-platform solutions are not yet possible.
- Links to learning management systems or enterprise systems are in an embryonic stage of development.
- The industry is plagued by proprietory solutions.
- Transmitting across different browsers and platforms is almost impossible.

- Existing applications are not easily integrated to the mobile technology environment.
- Start-up costs are invariably high.
- Tracking outcomes is difficult.
- Security is a major issue.
- Cost of accessing major third-party networks is punitive.
- Multiple permissions are necessary in terms of negotiated access.
- Continuous technology development militates against stability and sustainability in terms of mounting viable m-learning applications.

There are many overlaps between e-learning and m-learning pedagogical considerations. While e-learning has been developing over a number of years, there is surprisingly little research into the pedagogical effectiveness of the learning experience through technology enhancement. Much of e-learning develops as a response to the convenience factor of more flexible study patterns. Enhancement of the learner experience has not been a key driver so far, although there are now signs of growing interest in learner outcomes derived from e-learning environments.

Given this situation, there are lots of "warning-bells" for the m-learning fraternity who face much more difficult challenges in terms of providing evidence of a satisfactory learning experience, because of the limitations of the mobile technologies and communication networks. While a whole scale transition of traditional teaching to mobile devices may not be practical yet, a number of interactive activities can be ported to mobile devices. Both Voice and SMS can be a valuable component in language teaching. Small practice exercise on spelling, grammar and pronunciation can be well executed on even basic mobile phones.

The emergence of specific platforms for what is now called 'netbooks' based on the Atom processor and current developments in 3G do point to the possibilities of new low cost, light and low power consuming 'e-slates' in the future which could be the icon for all students, much like the laptop today is for all corporate executives. The universalization of secondary education in India could alone be the propeller for such a product.

9. Web 2.0 and Teacher Education

Web 2.0 refers to a number of web technologies and applications that have emerged and evolved over recent years and that have changed the way that people are using the Internet. These technologies offer different means of accessing information and interacting with web content that facilitate the social, interactive nature of Web 2.0. In this section of the paper those technologies, concepts and applications are briefly described.

Technologies:

RSS - Rich Site Summary or Really Simple Syndication (RSS) is a format for delivering regularly changing web content (e.g., a blog, a podcast, a videocast). RSS allows someone with an RSS equipped web browser to quickly view multiple textual headlines or sound/ visual media (i.e., podcasts).

XML - Extensible Markup Language (XML) is a simple text format designed to support the accurate, flexible and adaptable exchange of a wide variety of data.

Ajax - Ajax, shorthand for Asynchronous Java Script and XML, is a web development practice for creating interactive web applications.

API - An application programming interface (API) is the interface that a computer system, library or application provides in order to allow requests for services to be made of it by other computer programmes, and/or to allow data to be exchanged between them.

Applications:

Blogs - A Weblog or Blog is a website that posts regular journal entries in reverse chronological order.

Pod/videocasts - Podcasting is a form of media broadcasting on the Internet that is designed to be played back on portable media players and personal computers.

Wikis - A wiki is a website that allows users to collaboratively create and edit web page content using any web browser

Mashups - A mashup is a website or web application that uses content from more than one source to create a completely new service.

Concepts:

Mixing the global with the local - This concept involves making global information available to local social contexts and giving people the flexibility to find, organize, share and create information in a locally meaningful fashion that is globally accessible.

New Interfaces - Web 2.0 involves finding unique ways of searching and accessing web content through new interfaces.

Microcontent - Microcontent are small digital units that can be moved, and then reused in multiple sites and for different functions. Microcontent can be text, images, URLs, audio files, or anything smaller than a Web site or whole Web page.

Tags - Tags are descriptors or keywords that individuals assign to digital objects including images, sounds, reviews, stories, videos, in the practice of collaborative categorization known as folksonomy.

Folksonomy - A folksonomy is a user generated taxonomy used to

categorize and retrieve web pages, photographs, web links and other web content using open ended labels called tags.

Social software - Social software are online environments, centering on special personal and professional interests that are specifically focused on building and verifying social communities. Social networking software is distinguished by its ability to facilitate three kinds of communication, one-to-one, one-to-many, and many-to-many in the form of, to name a few, text chat, instant messaging (IM), discussion boards, blogs, and wikis. Social software sites has proliferated in recent years because of their capacity to allow individuals to share "rich media", video, pictures. Audio, photos and other digital content that is self-created.

- **4 of the top 10** websites in terms of total traffic in 2008 were social networking sites
- From a non existent category in 2005 to the **2nd largest specific activity** on the web in 2008
- **16% on online time** worldwide is spent on social networking, greater than shopping +travel +work +business +education put together (14%)
- **YoY growth** for Facebook is **+305%** in the last year, with >50% users **returning daily**
- **Facebook** has a **group** for **"Primary Teachers"** with **over 38,000 active members** from across the world

On-line social networks enable real time sharing of information, knowledge and news for millions of users across geographies. This is a low cost and scalable model that can enable interaction and seamless communication being an online medium of readily accessible resources.

Specifically online social networks can help the community of teachers to:

- store, organize and access resources when needed.
- facilitate real time communication.
- seek help, guidance and share experience on specific issues relating to their subject/topic.
- search for people, data and content dependent on their need.
- organize the community into forums or groups and raise forum level relevant discussion threads.
- enable guidance and mentorship from ex-teachers or external experts.
- help the nodal agency control all activity within the network.
- create a calendar to synchronize and organize events.

One such platform that combines social network expertise with web 2.0 content is provided by Gaboli Online Services. The product can be tried at www.gaboli.com/demo

Very soon expect niche players are expected to develop products and services such as " Learning English with Web 2.0"; " Improving mathematics with Web 2.0"; " Relish the joy of learning science with Web 2.0"; " Active economics with Web 2.0" and so on.

As of now a lot of exploratory work is being done in this direction and Classroom 2.0 is being modeled, but it may take a few more years before this becomes commonplace. But teachers will have to do a significant bit of their own transformation to be able to fully utilize the potential of these new technological capabilities.

Some other Web 2.0 websites include :

Social Software

http://www.myspace.com
http://www.facebook.com

Social Bookmarking :

http://del.icio.us/
http://www.blinklist.com/
http://www.stumbleupon.com/
http://www.flickr.com/ - images
http://ma.gnolia.com/
http://www.youtube.com/

Collaborative Writing :

http://www.google.com/docs
http://www.jotlive.com/
http://basecamphq.com/

Writing, Searching, and Navigating the Blogosphere :

http://www.feedster.com
http://www.blogpulse.com
http://www.waypath.com
http://www.blogger.com/start

Organizing Microcontent :

http://www.pageflakes.com/
http://www.netvibes.com/
http://reddit.com/
http://rollyo.com/

10. Teacher Education Programme Modules

The teacher has to perform many new roles transcending the standard gatekeeper to information. Some of these activities as generally accepted by thinkers in this field are:

- Help the learner identify the starting point for a learning exploration.

- Create a partnership with the learner by negotiating a learning contract for goals, strategies, and evaluation criteria.
- Be an organizer of the learning experience rather than a mere information provider.
- Encourage the setting of objectives that can be met in several ways and offer a variety of options for evidence of successful performance.
- Teach inquiry skills, decision making, personal development, and self-evaluation of work.
- Recognize learner personality types and learning styles.
- Encourage critical thinking skills by incorporating such activities as seminars.
- Create an atmosphere of openness and trust to promote better performance.
- Obtain the necessary tools to assess learners' current performance and to evaluate their expected performance.
- Provide opportunities for self-directed learners to reflect on what they are learning.
- Recognize and reward learners when they have met their learning objectives.
- Participate actively in learning networks, study circles, and learning exchanges.

10.1 Training Modules

The range of ICT skills that a teacher would have to acquire in order to cope up with the challenges of both quality and quantity have been earlier referred to. The following 25 modules are being suggested as useful for the teachers of tomorrow. The titles communicate the broad idea, but for each module the expected learning outcomes, the topics to be covered, the assessment methods and the number of hours of instructor led studies has to be detailed. Some benchmark and reference material is available in the form of existing products (example given below for module no. 4 as offered by Edexcel) and for some modules it will have to be developed *ab initio* looking at the requirements of teacher training.

S. No.	Title of the Module
1.	Undertaking learning needs analysis
2.	Using ICT to support learning
3.	Preparation and delivery of presentations
4.	Developing assessment practice
5.	Updating specialist skills and knowledge
6.	Developing resources to support learning
7.	Delivering learning through demonstration and instruction
8.	Managing new developments to support learning
9.	Promoting independent learning

10. Facilitating group learning
11. Supporting and advising learners
12. Undertaking coaching to enable learning
13. Undertaking mentoring to support personal development
14. Designing learning programmes
15. Developing creative approaches to learning
16. Maintaining professional standards and ethics
17. Managing review and evaluations
18. Webagogy and new Instructional design
19. Traditional Instructional Design
20. Pedagogic value of computer games
21. Managing Information Systems Security
22. Enhancing Learner Motivation
23. The Right to Information Act and Education
24. IPR, Plagiarism and Creative Commons Licensing
25. Using Web 2.0 tools for teaching

The time required to cover each of these modules could range between 10 to 30 hours, of which about 30% may be didactic and the rest interactive, between teacher and learner and between learners as part of team learning. The learning acquired may not be tested by traditional examinations but by demonstrations of the skills learnt through a portfolio that is submitted for appraisal. Almost an equal number of additional modules could be added to the list suggested above, so that eventually there may be a pool of about 50 such modules and teachers may choose to do a few of them according to their immediate needs, and pursue others later as their interests or needs require.

A detailed descriptor of Module 4 in the above list may look like the following (Reproduced from existing module from Edexcel, a UK award giving body)

Module 4 : Developing Assessment Practice

Guided learning hours: 30

Description of unit

Assessment is a well recognised means of measuring individual learner success. It can also be used for other purposes such as demonstrating accountability and making comparisons against other institutions or the national achievement rates. It is an important part of the role of teachers and trainers and therefore they need to understand and use assessment effectively. They need to understand the principles, methods and different types of assessment most suited to their purpose and specialist area. They also need to design and conduct assessment. Teachers and trainers need to provide feedback which arises from the assessment in order to support learning. The outcomes of assessment need to be recorded following the appropriate procedures. They then

need to evaluate the different assessments and suggest future improvements.

Learning Outcomes

After covering this module, a learner must:

1. Understand the principles, methods and types of assessment;
2. Use different methods of assessment to ensure validity of assessment decisions;
3. Evaluate the effectiveness of different types of methods.

Understand the principles, methods and types of assessment

Principles and role of assessment: Comparison; monitor progress; measure of achievement; measuring against national standards; accountability; support for learning; motivation; effectiveness of teaching.

Methods and types: Methods e.g. self, peer, accreditation of prior learning (APL), oral, written, visual, computer based, on-line, demonstrations, experiments, simulations, projects and assignments, question and answer, tests e.g. multiple choice, short answer, essay-style; types e.g. diagnostic, initial, formative, summative, linear, modular, synoptic, internal, external, naturally occurring, planned

Choice of assessment method: ontext; target group; desired outcomes; programme requirements; internal and external requirements; expertise; variety

Different types of assessment: Diagnostic; initial; formative; summative; linear; modular; synoptic; internal; external; naturally occurring; planned; learner need

Assessment: Valid; reliable; authentic; current; sufficient; assessment schemes e.g. marks, percentages, criteria, grades, competence;

Feedback: Clear; reinforcing; constructive; motivational; challenging; based on outcomes; timely; interactive; written and/or oral; level of language; environment

Outcomes: Results; achievements; procedures eg organisational requirements, local and national requirements, awarding body requirements; format e.g. written, computer based

Evaluating methods: Method; purpose; type; procedures; fit for purpose; coherence; validity; currency; reliability; fairness; sufficiency; manageability; cost; correct level; individual and group need; advantages and disadvantages; effectiveness of design; activities used

Improvements: Method; type; procedure; design; timing; sufficiency; level

Outcomes and Assessment Requirements

Outcomes	Assessment requirements To achieve each outcome a learner must demonstrate the ability to:
1 Understand the principles, methods and types of assessment	• describe the principles and role of assessment • identify methods and types of assessment • justify the choice of assessment methods for different purposes
2 Use different methods of assessment to ensure validity of assessment decisions	• develop different types of assessment according to purpose and learner need • conduct assessment that ensures validity of assessment decisions • use feedback effectively to support and encourage learning • record the outcomes of assessment following established procedures
3 Evaluate the effectiveness of different types of methods	• evaluate different assessment methods in relation to purpose and specified learner need • suggest improvements in methodology for future assessments

Guidance

Generating Evidence

Delivery

Learners will be teachers and trainers in the work place, or in schools and colleges. Those already experienced in assessment will be able to draw on their existing knowledge and experience. They should be encouraged to look at their past and current practice in relation to current thinking. Learners need to be provided with opportunities to view a range of assessments and to explore features, strengths and weaknesses of types of assessment that they have not used before.

They can be prepared for this unit through one-to-one training, group sessions, and self-directed study. Where possible, group learning could be used to encourage the sharing of ideas. Throughout the process, there needs to be interaction between the tutor and the learners and also between the learners themselves.

Assessment

Assessors of this unit will need to assess their learners against the learning outcomes and assessment criteria using the evidence generated. Since the learners are expected to develop their assessment practice assessors of this unit will need to establish the individual starting point so that evidence will reflect this development.

Evidence could include a report of the principles, methods and types of assessment with a justification of the assessment method for the intended purpose. It will also include 3 examples of assessments developed, the assessment decisions along with the feedback and records. Question and answer or discussion between the assessor and the learner could be used to clarify aspects of the evidence as necessary. Where oral evidence is generated this should be recorded by the assessor. The assessment record of the assessor and the learner's evidence could be gathered together in a portfolio.

Resources for this module

- Tutor designed presentations, materials and exercises.

Suggested texts

- Gibbs G and Habshaw T '53 Interesting ways to Assess your Students' Technical and Educational Services'
- Wolf A 'Competence-Based Assessment' Open University Press, 1995
- Morgan C and O'Reilly M 'Assessing Open and Distance Learners' Kogan Page, 1999
- Murphy P 'Learners, Learning and Assessment' Chapman Publishing, 1998

11. Independent Educators

We need to re-assert and re-establish the supremacy of the teacher, and not the bureaucrat or the institution. As we enter the Knowledge Economy, it is important to appreciate that education alone will create valuable knowledge products for global use, and this alone will let us flourish and thrive in the new age. If we establish a teaching profession, which meets international standards in keeping with the call of globalisation, it permits independent practitioners to move about under mode 4 of the GATS as well as practice their profession at home without the need for institutional intermediaries, and with access to training in modern ICT tools both for synchronous and asynchronous interactions across the globe.

In the recent years, the three ideas that have had a huge impact on the way organizations work are quality, business processes and their re-engineering and the importance of intellectual capital. All three must be assimilated into the educational systems, because it is the teachers who

will become leaders in the knowledge economy, as they alone know how to construct knowledge. A mere expert knows his subject, but a good teacher knows how a person can learn the subject. If it can be done in a measured way, it can develop into teaching technologies rather than mere magic at the hands of a great teacher or a non-replicable art in the hands of a few that will eventually die out. With the help of well understood learning contracts, clearly articulated learning outcomes and learner tracking systems, it can almost be ensured that the agreed learning outcomes are achieved.

Just as it is legitimately possible for any lawyer, doctor, engineer, architect, chartered accountant to work for a state government, the central government, a large corporation, a small business or to work independently on his own, it should be possible for qualified educators to work independently outside the traditional Institutional frameworks on their own.

The separation of powers doctrine in governance applies most neatly when ministerial departments implement legislation made by Parliament, and are subject to judicial review by the courts. Like the separation of powers in good democratic governance and the principles that are being applied to good corporate governance, if we decouple the responsibilities for laying down of standards, conduct of examinations, the teaching-learning processes, and maintain databases that are shared with potential employers of qualifications acquired by learners, holding the certificates in de-materialised forms like we do for de-mat shares, we can see lots of opportunities for educationists. Collective, co-operative networking arrangements with branded teachers working together under a brand that communicates a commitment to a shared vision would remove many ills of the present system and unlock the large potential that we have in retired accomplished teachers or unemployed younger talented people. Teachers need not ever retire and can continue to play a role in imparting education till they can do so (incidentally there is no retirement age for politicians, lawyers, doctors and many other professionals). This idea is a very straightforward solution to the twin problems of educated unemployment and not enough access to education to the needy.

The other professions have bodies such as the Bar Council, the Medical Council, the Institute of Chartered Accountants. We can have such an Educational or Teachers' Council, which may be a constituent component of NCTE.

The recent amendments in the Companies Act that are proposed regarding one-person Company and the concept of Limited Liability Partnership can help facilitate this further. Educators can work independently as one person company in their individual capacity, or a group of educators can form a limited liability partnership, and in both these ways can seek investors and support from financial Institutions, especially those dealing with small and micro-enterprises. And if required there can be special provisions for such educational entities to prevent any possible abuse.

Note: The thoughts and ideas presented here draw upon large amounts of research and experimentation that has been done by a number of educators over a period of time all over the world. Much of it is part of what may be broadly called ' a commonly agreed upon body of knowledge'. Precise acknowledgement of the first enunciation of each idea or the first user of a word, phrase or expression becomes a difficult task. This is a general acknowledgement of such works, documents and books which have helped shape and are continuing to influence my ideas as I go back to the drawing board to 're-look' the education system to meet the challenges of the future, where the starting point is not 20 students of similar abilities in a class but a million diverse learners who have to be transformed efficiently over a short period of time with predictable rates of success and then this model of teaching a million students at a time has to be replicated a hundred times.

References

National Knowledge Commission (2006) *Note on School Education*, New Delhi, GOI.

MHRD (2007) *Working Group Report on Elementary Education and Literacy for XIth Five Year Plan : 2007-12*, New Delhi, GOI.

NCTE (1995) *National Council for Teacher Education Act, Rules and Regulations*, New Delhi, NCTE.

Websites

- http://www.tes.co.uk/resources/home.aspx (This is the website of the Times Educational Supplement. Free resources for teachers can be identified by subject and type, including assessment).
- http://innovaionzen.com/biog/2006/10/04/disruptive-innovation/ classdisrupted: Christensen thoughts on innovation
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Chapter 7

Inclusive Education - Implications for Teacher Education

M.N.G. MANI

1. Concept of Inclusion

Three historic developments in the 1990s paved ways for the emergence of the concept of inclusion. First, the movement on "Education for All (EFA)" which originated from the international conference jointly organised by the World Bank, UNESCO and UNICEF in Jomtien, Thailand in 1990 and reminded Governments on the need to treat education as an investment in human capital. Though there was a mention about the need for education of disadvantaged sections in the Jomtien Declaration, the real thrust for inclusion emerged at the international conference organized by UNESCO in Salamanca, Spain, in collaboration with the Government of Spain in 1994, which brought together more than 300 participants from 92 Governments and 25 international organizations. The participants of the conference emphasized the need for improving enabling schools where every child including children with special needs has a place to acquire learning experiences. The actual statement made at the conference conveys the true spirit of "Schools For All" concept, which purports not to look at the differences between children but similarities in order to consider that every child is a special child and a better school system can address the educational requirements of children with specific learning difficulties. The third historical development was the Dakar Declaration (2000) which stressed the need for time bound action in such a way that education for all children is achieved by the year 2015.

The attempt to define "What is All" in the EFA created a need to reach out to children who did not have access to formal education. Though the population of "out-of-school" children included various categories such as children of migrant workers, orphans, children from below poverty line (BPL) families, children with disabilities, etc., the term "inclusion" is referred often in the case of disability. There is a vivid reason why the professionals

started linking inclusion with disabilities. The earlier approaches to educate children with disabilities mostly adopted exclusive strategies which generally embraced a theory that children with disabilities require facilities different from that of non-disabled children and, therefore, exclusive approaches were justified. Until the mid-20th century, special school approach remained the most accepted model to educate children with disabilities.

Attempts to identify similarities between children with disabilities and non-disabled children in the learning process brought in a paradigm shift in educational approaches too. Researches on "multi-sensory" approaches in learning revealed that lack of ability in one faculty does not totally hamper learning capabilities in the child and as a result the academic community started looking at "similarities" between disabled children and non-disabled children. Though it was not possible to observe perfect similarities, the more "like" than "unlike" characteristics paved ways for bringing children with disabilities to general schools and as a result, the terminologies "integration" and "mainstreaming" emerged. The integrated education model believed in providing education to children with disabilities in general schools with necessary teacher and material support, but it did not fully focus on how the general education system could be improved to address specific learning needs of children with disabilities.

The approach of "effective schools" emerged in the 1990s, which stressed the need to prepare teachers, who acquire skills to address the diverse needs of children in the classroom without labeling them as children with disabilities. In order to provide effective education and respond to pupil diversity, there would sometimes be a need to implement particular teaching approaches with specific children at various times (Zelaieta, P in Armstrong and Moore, 2004). The teacher education resource pack of UNESCO (1995) underlined the need to treat every child in the classroom as a special child. This broad paradigm shift in the learning process changed the entire approach to inclusion and as a result, children with disabilities were referred to as "Children with Special Needs" meaning that there are non-disabled children too in the learning system who may require special attention of teachers. Booth and Ainscow (1998) who did extensive work on inclusive education state:

> *"Students placed in special education categories are some of those who have been subject to exclusionary pressures in schools, and their categorization itself often contributed to the process of exclusion. The attempt to engage such students in curricula appropriate to their interests and attainments and foster their participation with others can be seen as fostering their mainstream inclusion ... It requires that we see students with disabilities and those who experience difficulties in learning as part of the diversity of the student population, subject to a wide variety of inclusionary and exclusionary pressures. It means that we have to resist a division between "us" and "them",*

the normal and abnormal students and the use of the euphemistic categories, such as "learners with SEN" (special education needs), which obscure such a practice."

Therefore, the terminology "inclusion" is used to denote everyone. As the lobby for inclusion of children with disabilities in the mainstream society is more vigorous than other categories, the term "inclusion" has become synonymous with "disability."

2. Sarva Shiksha Abhiyan - The Indian Approach to inclusion

The Government of India has initiated the Sarva Shiksha Abhiyan (SSA) with an attempt to achieve education for all. The scheme is an excellent framework and allows a lot of flexibility at the district level to adopt cost-effective and innovative strategies to include all children under the umbrella of education. All facets of comprehensive education such as community participation, improving teacher skills, provision of learning materials, special emphasis on disadvantaged groups, etc., are covered under the scheme.

As per the guidelines issued by the Government of India, SSA is an effort to universalize elementary education by community ownership of the school system. It is a response to the demand for quality basic education all over the country. The SSA programme is also an attempt to provide an opportunity for improving human capabilities of all children through provision of community owned quality education in a mission mode. The programme envisages partnership among the Central, State and the local governments and it also provides an opportunity for the States to develop their own vision of elementary education.

2.1 SSA and Disability

SSA aims that every child with special needs, irrespective of the kind, category and degree of disability is provided education in an appropriate environment. SSA adopts a zero rejection policy so that no child is left out of the education system. Though the targets of SSA are set forth for the general education system, concepts such as "Education Guarantee Centre", "Alternative School", etc., are more relevant to achieve education for all disabled children. Under the SSA programme each block of the district can appoint special teachers based on the number of disabled children identified in the block.

The SSA has made significant progress in the last five years. Experiences in many States in the country reveal that general schools are opening doors for children with disabilities and as a result, more children are currently enrolled. It is projected that the SSA programme is likely to result in a quantum leap in the years to come in providing education for all children with disabilities in India, and with this momentum, more children with disabilities who are currently unreached will be brought under the umbrella of education.

The thrust of SSA is on providing integrated and inclusive education to all children with special needs in general schools. It supports a wide range of approaches, options and strategies for education of children with special needs. This includes education through open learning systems and open schools, non-formal and alternative schooling, distance education and learning, home-based education wherever necessary, itinerant teacher model, remedial teaching, part-time classes, community based rehabilitation and vocational education and cooperative programmes.

3. Inclusion is not a programme but an ideology

As proposed by the SSA, inclusion assumes that the overall system of education becomes effective in order to encourage "Schools for All." Therefore, inclusive education is an ideology and not a mere programme. It is a concept of effective schools where every child has a place to study and teachers become facilitators of learning rather than providers of information. Inclusion is the general goal in India and the ways of facilitating inclusion are many. Inclusion has different connotations in different nations. For some countries, refining the entire educational system is the objective of inclusion whereas for some others, entry of a special needs child in general classroom itself is inclusion. Yet for some others, inclusion is a macro level policy issue whereas for many, inclusion at the micro level (school) is the major concern. In some nations, the child with disability has an option for inclusive schools or for specialised programmes whereas for many developing nations, inclusion is the only option.

3.1 Ideal Inclusion

As far as India is concerned, the ideal system of inclusion is that the general education system itself should make education of children with disabilities as its integral part. This implies that the general classroom teachers should be equipped with skills to address the educational needs of these children with minimum or no assistance of special teachers. This calls for strengthening the pre-service general teacher preparation programme by including adequate component of the education of children with disabilities in the general curriculum.

In summary, inclusion is a process that empowers persons with disability.

3.2 Legislation supporting Inclusion: Persons with Disabilities Act 1995

Following the emergence of the EFA movement in 1990, many national governments came up with comprehensive legislation to ensure educational opportunities for persons with disabilities, and in India, legislation was enacted in the form of Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act in 1995. As per the PWD Act, seven categories of disabilities, namely blind, low vision,

deaf, mentally retarded, locomotor disability, leprosy cured and mental illness have been included.

The PWD Act 1995 attempts to empower persons with disabilities with their rights to education, rehabilitation and employment. It is perhaps one of the most comprehensive Acts on disability in the developing countries. It states that a person can be certified as disabled if the individual is suffering from not less than 40% of the disability. As per Chapter V of the Act which deals with education, the central and state governments shall ensure that every child with disability has access to free and adequate education till the age of 18. It also indicates that integrated education and special schools will have to be set up to meet the educational needs of children with disabilities. Introduction of non-formal education, functional literacy schemes, provision of aids and appliances, education through open schools and universities, etc., are also stressed in the Act. It indicates that the Government should create adequate teacher training facilities to prepare teachers for special and integrated schools. Development of research on assistive devices is also envisaged in the Act. Various service oriented programmes have to be designed for ensuring the right opportunities and experiences to persons with disabilities. Following the PWD Act, the National Trust Act emerged in 1999 to lay special focus on children with mental retardation, cerebral palsy, autism and multiple disabilities.

4. India's Ratification of the UNCRPD: Move towards Treatment of Disability as a Developmental Issue

Creation of inclusive environment for children, according to their learning abilities, is becoming the emphasis all over the world and in this context, the International Disability Alliance stated that the purpose of any activity for persons with disabilities should ensure that they are rights-based, barrier free and develop an inclusive society. The support for Education For All has also been stressed in the United Nations' Convention on the Rights of Persons with Disabilities (CRPD), which was ratified by India in 2007. Article 24 of the Convention pertaining to 'Education' states:

1. States parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States parties shall ensure an *inclusive education system* at all levels and lifelong learning directed to:
   (a) The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedom and human diversity;
   (b) The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential;

(c) Enabling persons with disabilities to participate effectively in a free society.

2. In realizing this right, States parties shall ensure that:

(a) Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability;

(b) Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live;

(c) Reasonable accommodation of the individual's requirements is provided;

(d) Persons with disabilities receive the support required, within the general education system, to facilitate their effective education;

(e) Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion.

3. States parties shall enable persons with disabilities to learn life and social development skills to facilitate their full and equal participation in education and as members of the community. To this end, States parties shall take appropriate measures, including:

(a) Facilitating the learning of Braille, alternative script, augmentative and alternative modes, means and formats of communication and orientation and mobility skills, and facilitating peer support and mentoring;

(b) Facilitating the learning of sign language and the promotion of the linguistic identity of the deaf community;

(c) Ensuring that the education of persons, and in particular children, who are blind, deaf or deaf-blind, is delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize academic and social development.

4. In order to help ensure the realization of this right, States parties shall take appropriate measures to employ teachers, including teachers with disabilities, who are qualified in sign language and/or Braille, and to train professionals and staff who work at all levels of education. Such training shall incorporate disability awareness and the use of appropriate augmentative and

alternative modes, means and formats of communication, educational techniques and materials to support persons with disabilities.

5. States parties shall ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others. To this end, States parties shall ensure that reasonable accommodation is provided to persons with disabilities.

The CRPD, which India ratified, really calls for inclusion to emerge as a mass movement and this can be done only when the general system of education is fully sensitised to the educational needs of these children.

The RCI Act 1992

In 1992, the Rehabilitation Council of India (RCI) Act was passed in the Parliament. The Act was created by the then Ministry of Welfare (presently known as the Ministry of Social Justice and Empowerment) to regulate the manpower development programmes in the field of education of children with special needs. The major responsibilities of the RCI are:

- To regulate the training policies and programmes in the field of rehabilitation of people with disabilities.
- To bring about standardization of training courses for rehabilitation of professionals/personnel dealing with people with disabilities.
- To prescribe minimum standards of education and training institutions in the field of rehabilitation uniformly throughout the country.
- To regulate these standards in all training institutions uniformly throughout the country
- To recognise institutions/universities running degree/diploma/ certificate courses in the field of rehabilitation of the disabled and to withdraw recognition, wherever facilities are not satisfactory.
- To recognise foreign degree/diploma/certificate in the field of rehabilitation awarded by Universities/Institutions on reciprocal basis.
- To maintain a Central Rehabilitation Register of persons possessing the recognised rehabilitation qualification.
- To collect information on regular basis, on education and training in the field of rehabilitation of people with disabilities from Institutions in India and abroad.
- To encourage continuing rehabilitation education by way of collaboration with organisations working in the field or rehabilitation of persons with disabilities.

4.1 Human resources to fulfil the requirements of legislation

Effective inclusion depends on the quality of human resource development too and, in this context, the Rehabilitation Council of India has developed and is regulating a number of teacher training programmes.

Though the RCI is trying to augment human resource development in the area of disability through Universities and teacher training institutions in the country, the present status of teacher preparation to promote inclusion is far from satisfactory.

5. Philosophical and Sociological Implications of Inclusion

In addressing the philosophical and sociological implications of inclusion, the issue of *"why segregation"* and *"why inclusion"* in Indian context should be reviewed. Some of the important facts in the Indian scenario are as follows:

5.1 Stereotype Responses Resulted in Segregation

The growth of the special school concept in the case of children with disabilities in the past contributed to their 'segregation' from the society at large. Special schools became residential homes and disabled persons coming together heightened the sense of security among them. Therefore, the special school concept started gaining popularity among persons with disabilities. The ideas such as 'disabled persons are special', 'disabled persons have sixth sense', etc. contributed to more stereotype responses on disability and these attitudes made them excluded from the general stream. Thus, focusing of the "difference" of disabled children from non-disabled children made special education APART from the general education. The sympathy towards them superseded human rights and as a result, education of disabled children remained a welfare activity for decades together.

5.2 Why Inclusion?

1. More than 90% of children with disabilities are found in the rural areas in India. The special schools are only a few in numbers and cannot serve all. Therefore, inclusive education is needed to provide equal educational opportunities to them in their own localities.
2. As far as the standardised models of integration are concerned, one specialist teacher serves 8 to 10 disabled children of the same category. This approach is not practical in rural areas. In most villages of the country, disabled children of different categories are present. Therefore, the disabled child has to depend on the general school for education. As a result, inclusion is inevitable for these children from rural areas.
3. The extent of disability in each category ranges from mild to

severe and profound cases. The mild and moderate cases are more in number than the severe and profound cases and they depend on the general education system. This calls for the involvement of general education so that the children who are currently left out of schools or those who are at risk can be served.

Therefore, the reality in India focuses on the need for inclusive education. In large countries like India, lack of educational access may be a driving force to expand education in order to bring children with disabilities who are currently unreached. This goal may be different from the developed countries which may be looking into inclusion as an option for the growth of the child. Soodak (In Vitello and Mithaug, 1998) states: *"Inclusive education may be an appealing option for parents who are dissatisfied with their child's education because of the high priority placed on the social and emotional development of their children, and their belief that segregated* special education classes hinder such growth." Therefore, the "Why Inclusion?" question needs to be addressed in the light of the philosophical and sociological perspective of educational opportunities available for children with disabilities in any country.

5.3 How is Inclusion different from Integration?

In special school concept, the special education component is APART from the general education system, whereas in integrated approach, it is A Part of the general education. Inclusive education goes one step further. In this approach, the special education is an Integral Part of the general education system. Therefore, the transition from 'Special School Concept' to 'Inclusive Education' evolutionary process in the services for children with disabilities.

6. Cultural implications and inclusive practices

Implications of inclusion should be viewed in the light of culture and practices of a country.

6.1 Cultural Legacy – A Contributing Factor for Inclusive Education in India

For an outsider, the life in India is a big miracle. It is a country with a population of over one billion people, more than a dozen official languages, unique customs and rituals in different parts of the country, more than 600 dialects and so on. Still, the strength of the country lies in the concept of "Unity in Diversity." This has been used for centuries together and this exemplifies the inclusive society in India. "Vasudhaiva Kutambakam" is a concept propagated in India since several centuries. Indian joint family system is still a mind-boggling concept for many outsiders. Social and community living is a vibrant idea in the Indian soil. Village court system is

a testimony for how the country is knit together. Care for others is an inherited ingredient in the Indian culture. Therefore, inclusive society is a natural phenomenon in the Indian soil. Indian family system is the miniscule of the village and community at large and, therefore, the family attitude is also reflected at the larger community level. Therefore, anxiety of the community in handling a person with disability should not be interpreted as the rejection and neglect of the person. India, being an inclusive society, is the first advantage for providing education to every child under one roof.

Inclusive education in special education may be a recent concept, but a kind of inclusion is an accepted approach in general education. In a general classroom in India, children with different levels of mental abilities study together. A classroom teacher usually targets the average learner in his/her teaching, but is also exposed to situations of handling slow learners as well as academically advanced learners. Therefore, inclusive education on the basis of cognitive abilities is already in vogue in general education. General classroom teachers apply this method of teaching without labelling it as 'inclusive education.' Only children at the two extremes of cognitive abilities are classified as 'mentally retarded' and 'gifted children'. Groups of 'slow learners but not mentally retarded', and 'academically advanced learners but not gifted children', are certainly different from average learners. However, they are taught by general classroom teachers only. The main similarity between non-disabled children and disabled children (such as visually impaired children and hearing impaired children) is their cognitive abilities. This similarity is a very supportive factor for these children to study along with non-disabled children in integrated education. With the learning of 'plus curriculum' to cope with the particular disability, these children can also compete with non-disabled children.

> Plus curricular skills are those compensatory skills a child with disability should learn for effective mainstreaming. For example, a visually impaired child should learn 'Braille' 'orientation and mobility', a hearing impaired child needs to learn 'sign language', etc. These are not extra but compensating skills to reduce the impact of disability.

7. Sound Practices in India

The options for educational models too have an impact on what type of inclusion any county will be contemplating for.

Educational services in India adopt a variety of context specific models. These indicate the openness of the country to use an eclectic approach in serving persons with disabilities. The following prominent models are in operation in India for serving children with disabilities and these varieties also have implications for inclusive approaches.

Model 1: Residential School for Persons with Disabilities

Characteristics:

1. Usually located in urban areas.
2. One of the oldest models to serve persons with disabilities.
3. Concept started in India in the late 19th century.
4. Nearly 3000 residential schools are serving about 100 thousand children with disabilities.
5. Curriculum is specially designed for them to suit their learning needs.
6. Twenty-four hour custodial care is given in these schools.
7. The schools mostly come under the Welfare Departments.
8. Vocational skills are also developed in children with disabilities in these residential schools.
9. Some residential schools send their children to integrated schools in the nearby areas for the purpose of secondary and higher secondary education.

Model 2: Integrated Education – Resource Room Model

Characteristics:

1. Children with disability are enrolled in a centrally located general school.
2. The enrolment is usually 8-10 children with disabilities for the appointment of one specialist resource teacher.
3. Usually children with disabilities of the same category are enrolled in one school. However, there are instances when different categories of children with disabilities are also enrolled in one school.
4. The specialist resource teacher serves as a consultant to the regular classroom teacher and to the child.
5. The specialist teacher teaches plus curricular skills to the child before, in-between and after classroom hours.
6. While specialist teacher is expected to provide direct services to children with disabilities when they are in lower classes, the children attend the regular classes for most of the time as they advance with their classes.
7. There is no separate curriculum for children with disabilities but curriculum adaptation is suggested in this model.
8. Evaluation of children with disabilities is on par with that of non-disabled children (except mentally retarded children).
9. Availability of a full-fledged resource room is ideal in this model but it is not mandatory. A resource kit may also serve the purpose.
10. Resource model is the most prominent model of integrated education in India at present.

Model 3: Integrated Education – Itinerant Model

Characteristics

1. Disabled children are enrolled in general schools which are located in the vicinity of the homes of the children.
2. The enrolment is usually 8-10 children with disabilities for the appointment of one visiting specialist itinerant teacher for a cluster of schools.
3. The visiting itinerant teacher is one who has expertise in serving all categories of children with disabilities.
4. The specialist itinerant teacher visits the general schools approximately two to three times a week or on the basis of the educational needs of the children and serves as a support to the regular classroom teachers of the visiting schools and to children with disabilities.
5. There is no separate curriculum for children with disabilities but curriculum adaptation is suggested in this model.
6. Evaluation of children with disabilities is on par with that of non-disabled children (except mentally retarded children).
7. There is no need to have resource room in all schools. A resource kit is suggested for the specialist teacher.
8. The itinerant model is not so popular but many non-governmental organizations are serving children with disabilities through this approach.

Model 4: Inclusive Education

Characteristics

1. Children with disabilities are enrolled in local general schools.
2. Enrolment of children with disabilities is mandatory as a result of the campaign for Education For All (EFA) children, that includes disabled children too.
3. All categories of children with disabilities and all levels (mild to severe cases) are enrolled in schools.
4. All general classroom teachers in the school are oriented to the educational needs of children with disabilities.
5. A Special teacher is appointed for a block or for a cluster of schools and should pay visits to schools, based on the needs of disabled children.
6. There is a cluster level resource centre where all assistive and assessment devices are available.
7. Frequent in-service programmes are organized to improve the skills of general classroom teachers in teaching children with disabilities.
8. Children with disabilities are sometimes brought to the resource centre, if necessary.

9. Children with disabilities are enrolled even if special teachers are not available.

In short, all practices of inclusion are in vogue in India.

8. Human Resource Implications of inclusion

The problem of India in inclusion is not in policies and models but in expansion. Lack of human resources is cited as one of the major issues in the expansion of inclusion. Government of India has launched the Sarva Shiksha Abhiyan (SSA) with an attempt to achieve education for all. All facets of comprehensive education are covered under SSA but the main problem of the programme seems to be that of lack of vital human resources.

Though inclusion happens in the general school setting, presence of special teachers is vital. Inclusive education does not mean just enrolling a child with disability in the regular classroom. The child should be given help to cope up with the regular class work. Therefore, child-centred approach is needed. The ideal inclusive setting would enroll disabled children of all categories and also of different levels of disability. All of them may not require the same kind of assistance. Some may require guidance rarely whereas some others need continuous help. The children in inclusive education may be classified as follows:

- **Category A - 45%** - Children with mild disabilities who can be handled by general classroom teachers with minimal training.
- **Category B - 30%** - Children with mild/moderate disabilities who need counselling services.
- **Category C - 15%** - Children with moderate/severe disabilities who need resource assistance including corrective aids and periodical help in academic areas.
- **Category D - 10%** - Children with severe disabilities who require direct attention/preparatory assistance from the special teachers.

Therefore, need-based instructional strategies are imperative in the inclusive setting. The children in category D may require the assistance of special teacher to a large extent at the beginning to learn plus-curricular skills.

Therefore, the extent of assistance should be decided on the basis of the instructional needs of the child. With the proper understanding of need-based instructional strategies, inclusive education will be successful.

As per the SSA data, a little over 26 lakh students have been enrolled in general schools. The category D students in this population will be about 250,000, who need more assistance from special teachers. In the centrally sponsored scheme of Integrated Education for Disabled Children, one special teacher is assigned for at least 8-10 students (or even less) and if this benchmark is applied, there is a need for 25,000 special teachers to serve the severely disabled children alone who have been enrolled so

far. The children belonging to other categories may also need occasional help of special teachers and, therefore, there is a great demand for special teachers. However, the present number of special teachers is far from satisfactory, as only 6,678 special teachers, at an alarming rate of more than 1:300, assist the students enrolled at present. The teacher student ratio in the case of severely disabled children too comes to more than 1:30. The state-wise availability of special teachers as per the national data is as follows.

The higher teacher student ratio will definitely have an impact on the quality of instruction. With the high rate of attrition of special teachers for various reasons, the need for special teachers is going to be a major issue to be addressed in inclusive education. The present trend clearly indicates that there is more enrolment of children with disabilities in the mainstream but the quality of educational intervention through special teachers is a larger issue, which needs to be addressed if the country is to ensure quality education for children with special needs including that of children with disabilities.

As per the projection of the Rehabilitation Council of India with regard to human resources, India requires at least 700,000 professionals of various categories to serve persons with disabilities. Teachers constitute the major human resource requirement with the concept of inclusive education growing steadily. Besides preparing special teachers, general teachers should also learn adequate content pertaining to disability in order to serve children with disabilities effectively in inclusive settings. The need to include special education training in the regular curriculum for teachers has been emphasized in several documents but most teacher preparation programmes are yet to make the changes due to lack of trained human resources and materials. It is high time that the general education curriculum is revamped to make it more inclusive.

9. Materials Management – Another Implication of Inclusion

Inclusive approaches of the present emphasise the need for a twin-track approach to ensure effective participation of persons with disabilities in the mainstream. While the first track refers to advocacy and empowering activities promoting inclusion, the second track refers to the skills to be developed, support materials to be made available, etc., which equip the persons with disability for better mainstreaming in the society.

Education may not become a reality without the creation of proper environment for learning, and, therefore, provision of appropriate services – both human resources and materials to the child to facilitate learning – is very vital.

10. Other Categories of Inclusion (Disadvantaged and Deprived Sections of the Society)

Inclusion happens at different levels. Some types of inclusion may

be more social in nature and some others require more academic interventions. The National Knowledge Commission (NKC) underlines the importance to provide access to a wide range of children with disadvantages. It says that gender equity must be ensured in the educational systems. The Global Monitoring Report 2008 of UNESCO states that though countries have made significant progress in universal primary education, difficulties in early intervention, gender equity and adult illiteracy are issues confronted by many countries in ensuring educational access. In India, the literacy among girl children is lower than that of boys. This becomes much higher among girls with disabilities, migrant workers, etc. The NKC further mentions that better access of Muslim children and children from scheduled caste and scheduled tribes require more flexible and sensitive schooling strategies. The NKC also states that children of seasonal migrants and labouring children too require special incentives and bridge courses. In the case of these children, improving access is the main issue but in the case of children with disabilities, improving access and ensuring education are important aspects. Therefore, there are more academic challenges to include children with disabilities than other groups.

11. When does Inclusion of all Children Work Best?

Inclusion works best when there is a fundamental change in the approach of classroom management. All children (including children with disability) can get effective education when the following key aspects are taken care of in general classrooms and, in this context, the classroom teacher plays a key role.

1. Inclusion in education recognises the fact that every child is special in one way or the other. The teacher with such an approach realises that each child has learning ability at different levels. Though classroom instruction in general is made uniform irrespective of the intellectual abilities of the children, a true teacher pays attention to the individual capabilities of the children. In such a classroom, the inclusion of all children takes place and they are not categorised on the basis of colour, creed, intellect, disability, etc.
2. Teacher with such an approach understands and capitalizes the collective strength of the classroom. He/she will never hesitate to take help from the students. Rather he/she would use the abilities of the students for constructive purposes. Such a teacher realises that students – both disabled and non-disabled – can also contribute to problem-solving situations in the classroom.
3. A true teacher who believes in inclusion facilitates peer-to-peer learning. As this type of learning is non-threatening in nature, the teacher is expected to promote peer group learning as a vehicle to overcome the students, inhibitions and would gradually

make the entire classroom non-threatening. A properly guided peer-group learning activity would make learning faster too. In addition to the pace, the teacher-guided student activity can also make the students responsible for a healthy classroom climate. In such a setting, a child with any type of disadvantage will not experience discrimination.

4. In an effective classroom, the teacher makes optimum utilisation of the available teaching aids and assistive devices. Instead of demanding for more and more teaching aids, a creative teacher makes use of the environment itself to develop appropriate concepts. Instead of insisting too much on theoretical learning, the teacher will encourage learning by doing and interactive learning approaches to make optimum use of the teaching aids as well as the environment for effective learning. When the teacher encourages learning by doing, disadvantaged children who require concrete experiences are benefited much.
5. A true teacher is always conscious of the fact that the students are human beings and not learning machines. This approach makes the teacher to set realistic goals for the students. Often, the ordinary teacher thinks that his/her subject is the only important subject and loads the students with a lot of homework and assignments. Likewise, other teachers too do the same thing and as a result, the student becomes a frustrated human being, not able to complete the home-work. This feeling of failure lowers the self-esteem of the child. Teachers should always realise the fact that the students have their limit and, therefore, set learning objectives and provide work which are realistic. As children with disadvantages require appropriate curricular adaptations, treating them as individuals facilitates better learning.
6. A true teacher will adopt multi-sensory approach in learning. The learning should be experiential to the students and hence, an effective teacher will make the classroom itself conducive place for learning. He/she will motivate each and every student of the class to involve in active learning and will be flexible so that children feel free in the classroom. He/she will identify the learning preference – visual, auditory or tactile, of the students and facilitate learning through small groups. Even the physical structure of the classroom may be changed by the teacher to ensure effective learning. This multi-sensory approach is not only useful for children with disabilities but for other children too who experience learning problems.
7. An effective teacher supervises the learning activities of the students regularly. He/she will try not to find fault with the work of the students but helps in rectifying their mistakes through constructive criticisms. This positive approach provides better

learning environment to children with disabilities and other disadvantaged groups.

As is evident from the previous description, inclusion emphasises the importance of individual and respecting his/her potential in the learning process. 'Recognising the potential of the individual' is what a child with special needs requires in an effective learning environment. Therefore, adopting inclusive approach in the classroom ensures effective teaching.

12. Barriers in the Implementation of the Concept of Inclusion

In addressing the barriers, there is a need to delineate the types of services facilitated for the betterment of inclusive setting. In inclusive approaches in India, three types of services are directly or indirectly required by the disabled child.

12.1 Essential Services: The most essential services in an ideal inclusive setting are to be provided by the general classroom teachers, non-disabled children and parents as well. The concept of child-to-child learning, cooperative learning approaches, etc., have demonstrated that effective learning can happen through interaction between the disabled child and all entities in the general school.

A sample list of essential services is as follows:

- Planning instructional strategies for children with disabilities.
- Teaching content to them.
- Maintaining records for curricular and plus curricular activities.
- General discipline in the classroom.
- Checking home assignments.
- Conducting examinations.
- Evaluation.
- Facilitating child-to-child learning.
- Tracking progress of the child.
- Consulting with special teachers about the plus-curriculum needs of disabled children.
- Interacting with parents of disabled children.

In an ideal inclusive setting, the general classroom teachers provide these services to disabled children. The terminology 'essential services' is used here because the disabled child cannot function well in inclusive setting without these vital services. When these vital services are provided by general classroom teachers, the child would be able to get education in the local school itself even if there is no specialist teacher to attend to him/her.

12.2 Support Services: The second type of service required in inclusion is the support service given by the fully qualified special teachers. These teachers provide necessary material support and occasional academic

support to children with disabilities and also provide the needed consultancy to regular classroom teachers. The support materials are compulsory but providing academic support by specialist teacher need not be made mandatory. The support services include the following:

- Identifying children with disabilities in the community.
- Teaching skills peculiar to disability wherever necessary.
- Assisting general classroom teachers, if needed.
- Arranging assessment for children with disabilities.
- Arranging learning materials for children with disabilities.
- Arranging aids and appliances.
- Monitoring the progress of the child through classroom teachers.

12.3 Peripheral Services: The third type of service is the one-time peripheral service which is adhoc in nature. Agencies such as hospitals, rehabilitation centres, and non-governmental organizations etc., can provide one-time services which include identification, assessment, counselling, etc.

The types of peripheral services are as follows:

- Issuing medical reports.
- Providing social benefits.
- Arranging sponsorship to educational activities.
- Counselling to parents.

These peripheral services are to be arranged by the heads of institutions offering inclusive education programmes.

13. Types of Barriers in Inclusion

Two types of barriers exist in inclusion – one is the attitudinal barrier and the other is the physical barrier.

13.1 Lack of exposure resulting in Attitudinal Barrier

Lack of exposure towards disability issues results in attitudinal barrier. For example, assuming that "disabled children have additional abilities", "they can't be on par with non-disabled children", etc, contribute to mental barriers of the teacher. These attitudes may be changed by organizing sensitization programmes for a greater number of persons with disabilities. As Helen Keller pointed out, "It is not the blindness, but the attitude towards blindness which is the hardest burden to bear." Teachers need to be sensitized to treat children with disabilities as 'children first' and 'disabled next'. The focus on 'ability' rather than the disability of the child may be stressed to overcome the attitude barriers of teachers. Similarly, a number of activities at the classroom level may also be organized to infuse positive attitude among non-disabled children.

Absence of the above characteristics in the school would contribute

to barriers mostly attitudinal in nature in the inclusion of children with disabilities.

13.2 Accessibility in Inclusive Education – Another Barrier

In terms of accessibility, physical barriers to attend schools should be addressed. Article 9 of the UN Convention on the Rights of Persons with Disabilities states that appropriate measures have to be taken by the Governments to ensure that persons with disabilities have access on an equal basis with others to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas.

It further states that the following should be done to ensure accessibility:

- Implementation of minimum standards on accessibility.
- Accessibility in private entities too which are open to public.
- Training on accessibility issues to stakeholders.
- Providing braille signage.
- Availability of guides and sign language interpreters.
- Access to information (*example: description in braille*).
- Access to new ICT systems and internet.
- Addressing accessibility issues at an early stage in the development of technology to reduce cost.

Access is the first step for any kind of learning experience. For a person with locomotor disability, movement is the major concern. Availability of ramps, use of non-slip floor materials, accessible toilets, width of passage, slope of the ramp, presence of elevators, accessible power controls, etc., are important aspects to increase accessibility. For a child with visual impairment, more auditory cues improve better understanding of the environment. Similarly, visual cues may help children with hearing impairment.

Unless the educational institution becomes barrier free, children with disabilities may not be able to access education, even if it is offered at policy level.

14. Classroom Activities to Overcome Attitudinal Barriers

The following activities help in overcoming attitudinal barriers and also facilitate better inclusion of children with disabilities in the classrooms.

14.1 Simulation Exercises about Disabilities: Simulation exercises about disability may be fun but they have profound educational value. In order to simulate disability conditions, non-disabled children in the general classrooms may be blindfolded for some time, their ears plugged for some time, and they can also be asked to walk using one leg, write without the

help of thumb, etc., to experience disability conditions of different nature. Often, non-disabled children find simulation exercises fun and therefore, like to have them. At the same time, they can also understand how children with disabilities live and learn. This type of simulation exercises would improve the concern of non-disabled children towards their disabled classmates. These activities also facilitate better inclusion of disabled children in the classroom. Teachers can also understand various conditions of disabilities through such activities.

14.2 Learning Plus Curricular Activities by non-disabled children: Children with disabilities have to master plus-curricular activities for their effective inclusion. However, orientation of these to non-disabled children would facilitate better inclusion for children with disabilities. For example, the braille dots can be taught to sighted children. Similarly, a few basic signs used by deaf children can be taught to hearing children so that they can communicate with deaf children. Disabled children appreciate non-disabled children studying these skills as they bring them closer to the mainstream.

14.3 Reader and Scribe Services: Due to disability conditions, some of them need assistance during examination time. For example, a blind child may not be able to read volumes of braille books at the time of examination. Moreover, many textbooks are also not available in braille and, therefore, a blind child needs a reader. A child with cerebral palsy and a child with mild mental retardation may also be benefited by reader services. At the examination time, a blind child and a child with cerebral palsy may require a scribe to write their answers. In inclusive setting many such examinations, class tests, term-end examinations, etc., are conducted and, therefore, a number of non-disabled children from the same class, or from higher classes may be involved to assist children with disabilities.

The above activities provide ample opportunities for disabled children and non-disabled children to interact effectively in the learning process in order to overcome the attitude barriers. The activities listed in this section are not exhaustive. Other activities such as drama, skit, role play, etc., involving disabled and non-disabled persons may also provide opportunities for effective inclusion of disabled children in the mainstream society. Physical barriers cause difficulty to the child with disability to come to school but attitudinal barrier on the part of teachers and students will cause damage to the learning of the child. Therefore, both physical and attitudinal barriers should be overcome to nurture better inclusive practices.

14.4 Modification of Curricular Content and Transactional Strategies to ensure Inclusion: In inclusive settings, there is no need to change the entire curriculum when children with visual impairment, hearing impairment and locomotor disability are enrolled. Instead, curriculum adaptations may be made to optimize the learning experiences of these children. Besides curriculum adaptation, teaching methods adopted by the classroom teachers may also facilitate better inclusion. Some of the curricular

adaptations required, teaching methods, and evaluation strategies are suggested as follows.

14.5 Curricular Adaptations: Giangreco and Doyle (in Wade, 2000) list the following five questions related to curriculum and instruction in inclusive education settings.

1. What does a quality curriculum for a student with disabilities in a general education classroom look like?
2. How should the content of the curriculum be determined?
3. How can individualised curricular content be addressed appropriately in the classroom when students without disabilities are pursuing different curricular content?
4. How can appropriate learning opportunities to include students with disabilities in classroom activities be identified or adapted?
5. How can institution be individualised within the context of general classroom activities?

With regard to curriculum, adaptations may be in terms of methods of presentation, display, content, etc., to enhance the learning experiences of these children. This approach not only helps children with disabilities, but also helps the teacher to assist children who have learning problems. In adaptation of learning materials for the use of children with disabilities, it is vital to see to what extent the information provided is creating a near normal experience to them. Therefore, adaptation work should be done carefully taking into account the learning style as well as the capacity of the disabled child. Curricular adaptations are mostly suggested for visually impaired children who need non-visual experiences. In a text material, it is vital to break them into different sub-units and analyse each and every sub-unit and classify the items as which are visual oriented and which ones are non-visual oriented. Further to this analysis, it is essential to indicate at what cognitive level the learning tasks fall so that the teacher can design appropriate strategies for the learning of the child. The curricular adaptations help children with mental retardation too who require individualised attention. As deaf children have limited communication abilities, the adaptations help them in understanding the content effectively. Therefore, curricular adaptations are most appropriate for the effective learning of all types of disabled children.

14.6 Concept Development: Concept development is fundamental in the education of children with disabilities, particularly for those who are cognitively impaired such as mentally retarded children and those with sensory impairment including visually impaired children and hearing impaired children. Loss of one sense adversely affects the concept development of these children. Though specific concept development areas are applicable for specific types of children with disabilities, some general areas include body awareness, object and situation characteristics,

time and distance awareness, spatial awareness, measurements, orientation of environment, etc. These have to be consciously developed in children with disabilities.

15. Transactional Strategies in Inclusive Settings

A good method of teaching is based on multi-sensory approach, whether teaching disabled children or non-disabled children. While teaching, the teacher should bear in mind that children with disabilities have lesser range and variety in some learning experiences due to their disabilities. However, they should have the conviction that reduced experiences can be compensated through effective methods of teaching.

15.1 Teaching Subject Areas

Some methods of teaching useful for children with disabilities are listed as follows:

1. *Play-way method of teaching*

In this method the child is not kept in the classroom as a bookish learner. The child is introduced the lesson through a number of play activities and in the process of such play, the teacher introduces specific concepts. Children who are learning through play-way method experience a sense of discovery.

2. *Providing Concrete experiences*

While learning children pass through in three developmental stages. Firstly, they need concrete experiences involving three dimensional objects etc. Secondly, they can learn through pictorial ideas, and thirdly, they develop abstraction. As far as children with disabilities are concerned, providing concrete learning experiences becomes pertinent. A strong foundation developed through concrete experiences will help them to understand the higher order experiences, including that of abstraction without major difficulties.

3. *Facilitating learning by involving children with disabilities in groups*

Cooperative learning approach is considered to be an effective teaching-learning process in the classroom especially when the class has children of different abilities. In a class consisting of children with disabilities, group learning can be planned by involving a child with disability in a group consisting of non-disabled children. This kind of activity not only develops the academic skills but also influences social integration of the child.

4. *Teacher assisted peer-group learning*

Peer group learning contributes to effective learning in the case

of non-disabled children and it is not less so in the case of disabled children. For adopting peer-group learning, a lot of preparation on the part of the teacher is needed. Activities for peer group learning, strategies for intervention, etc., are to be thoroughly planned by the teacher. A teacher in this process becomes the facilitator of information sharing and ensures that the children (including disabled children) study in a harmonious way.

5. *Teaching in a step-by-step way*

Due to the loss of a specific faculty, children with disabilities lose the sequence of learning experiences. They often experience mediated learning and as a result, they need well-defined learning strategies. Teaching in a step-by-step sequence becomes vital for children with disabilities. Though this type of incremental approach helps all children, children with disabilities are much benefited by this. They overcome the loss of learning experiences which are forced by the absence of the senses, when teaching is done in a step-by-step way.

6. *Modifying methods of teaching to suit the learning styles of disabled children*

The teacher should ascertain whether the child is a visual learner or an auditory learner or a tactile learner for designing proper instructional strategies. Though classification of this kind is imperative in the general classroom too, its application with children with disabilities is of paramount importance because these children exhibit different skills at different levels.

7. *Criterion based teaching as well as evaluation techniques*

Usually evaluation in a regular classroom is norm based. The teacher evaluates a child on the basis of quantitative scores. However, this type of evaluation may not be proper for all activities in the case of children with disabilities. Since disabled children have to learn curricular as well as plus curricular activities, mastery of the child over certain skills are more important than comparing the child with another child. Therefore, criterion based evaluation is appropriate, which will help to see the position of the child at various points of time. In criterion based evaluation, there is no pressure of comparative performance and therefore, the child learns in a natural way.

8. *Learning through field-trips and hands on experience*

Since children with disability experience reduction in the range and variety of experiences in many aspects, they need to be compensated by alternative modes of information. Field trips are such alternative experiences which mostly contribute to the proper

concept development of these children.

9. Use of supplementary teaching aids and appliances for developing appropriate concepts

As already indicated, concept development is vital for the disabled child to understand academic as well as non-academic areas. Sometimes a concept taught by the teacher using the normal mode of information may not be appropriate for the child with disability to understand. Therefore, it is essential to use additional teaching aids which may provide the needed concept development in the child. The supplementary teaching aids should not be considered as additional burden. In fact these are essential for providing the substituted learning experiences to children with disabilities.

10. Individualised Education Programmes

For specific categories, such as mentally retarded children, their needs and abilities must be assessed and appropriate instructional strategies must be designed and addressed based on their strengths and needs. It includes medical, social and psycho-educational interventions.

When the above aspects are addressed by the regular classroom teacher, teaching of any subject would become easier for the disabled child to understand as practice-oriented teaching approach enhances the learning efficiencies of disabled children and ensures their inclusion in the mainstream education.

16. Mainstreaming the Excluded through Inclusive Education – Initiative of NCTE and RCI

As is evident from the preceding sections of this paper, the success of inclusive education depends to a large extent on the preparedness of general classroom teachers. The general teachers need to be trained adequately in handling children with disabilities. The National Council for Teacher Education has already initiated work in this regard. A joint committee of the NCTE and the Rehabilitation Council of India (RCI) deliberated on how to improve teacher education in order to promote inclusive education. The Committee, which was constituted in 2005, looked into the following specific tasks:

1. To develop a course curriculum on special education for inclusion in general teacher education programmes of D.Ed., B.Ed., and M.Ed.
2. To give suggestions on strategy for implementation of the curriculum by all recognised teacher education institutions.
3. To develop norms and standards for recognition of courses of Special Education/Inclusive Education for children with special needs.

The Committee met a number of times in 2005-06 and also conducted regional level workshops involving teacher educators to find out the modalities to facilitate inclusive education by strengthening pre-service and in-service teacher education programmes.

The recommendations of the Committee addressing the above issues are as follows:

It was the unanimous view of the Committee that special education content should be incorporated in the existing core papers prescribed for the D.Ed., B.Ed. and M.Ed. general education courses so that the curriculum becomes inclusive. The broad content areas that may be included in the general teacher preparation courses are as follows:

1. Definitions – disabilities and legislative measures.
2. Learning behaviours of children with disabilities.
3. Assessment and educational planning.
4. Psychological Implications of disabilities.
5. Plus curricular content and activities.
6. Teaching strategies.
7. Assistive devices.
8. Preparation and adaptation of teaching-learning materials.
9. Role of family, peer-group and community.
10. Achievement evaluation.

The detailed curricular components based on the above areas that may be incorporated in general teacher preparation courses are listed as follows:

16.1 Units for possible inclusion in the Course on Psychology

Definitions and learning behaviors of children with disabilities

- Concept of impairment, handicap, activity limitation and disability.
- Definitions of disabilities as per the Persons with Disabilities (PWD) Act.
- Definitions of disabilities as per the National Trust (NT) Act.
- Incidence and prevalence of disability categories in India.
- Learning characteristics of children with disabilities.

16.2 Assessment, Educational Planning and Psychological Implications of Disabilities

- Stages of development with reference to children with disabilities
- Assessment for intervention and educational planning
- Impact of various disabilities on personality – an overview
- Theories of learning with reference to special-needs children and their application in special education
- Educational options for children with disabilities

16.3 Units for possible inclusion in the Course on Methods of Teaching

Plus curricular activities and teaching strategies

- Special skills necessary as a result of various disability conditions
- Learning stage – sensory motor, concrete operation and abstract thinking (logical operations)
- Compensatory instruction for concept development and learning.
- Methods of teaching various academic subjects to children with disabilities
- Role of functionaries – head masters/principals, special teachers, class room teachers, parents and peers in the education of children with disabilities

16.4 Assistive devices and adaptation of teaching-learning materials

- Types of assistive devices
- Use of technology in educating children with disabilities
- General principles of material preparation: duplication, modification, substitution and omission.
- Use of adapted instructional material for teaching and learning subjects like mathematics, science, social science, etc.
- Creative arts and adapted physical education activities

16.5 Unit for possible inclusion in the Foundation Course

Role of family, peer-group and community and achievement evaluation

- Awareness of development programmes in the community.
- Attitudes of parents, teachers, siblings and peer group and their modification.
- Role of multi-purpose rehabilitation workers and para-professionals and linkages between education and rehabilitation professionals.
- Techniques of guidance and counselling with reference to various disabilities.
- General strategies to evaluate the curricular and co-curricular activities.

Practicum : Out of the practice teaching lessons, 20% may be earmarked to teaching of children with special needs, ideally 10% in inclusive settings and the remaining 10% in special school settings.

17. Recommendations for Implementing Inclusive Curriculum in Teacher Preparation Programmes

In addition to suggesting curriculum changes in teacher education courses, the Joint Committee also put forth several recommendations for the implementation of inclusive curriculum in teacher preparation and also

for regulating such human resource development programmes. The salient recommendations are as follows:

1. Once the curriculum on special education is included in the general curriculum, there may be a necessity for at least one staff member from each teacher preparation institution to have in-depth knowledge in special education in addition to the orientation course to be offered to all general teacher educators. At present, the general colleges of education recruit staff members who possess a master's degree in school subject and a master's degree in education. As the M.Ed. special education and general education course patterns are identical, the Joint Committee, after a thorough deliberation strongly recommended that NCTE includes in its regulations that one of the staff members of Colleges of Education/Teacher Training Institutes (TTIs) should possess special education master's degree in addition to the regular requirement of having master's degree in school subject. By making this arrangement, all general pre-service teachers can get orientation on special education from qualified special education teacher educators.
2. Availability of a resource room consisting of basic assistive devices (Brailler, Sample Hearing Aids, Teaching-Learning Materials for Mentally retarded children, etc.) be made desirable in general teacher education institutions for according recognition by NCTE. This may also be made as a part of the Language Laboratory and the Audio-Visual Laboratory which are mandatory in general teacher preparation institutions.
3. The RCI inspection team for teacher education courses may include a nominee from the NCTE.
4. The Joint Committee was of the view that the existing norms of teacher preparation courses offered by the RCI are in conformity with the norms of the general teacher education courses approved by the NCTE. The differences are almost insignificant and therefore, the existing norms of the Rehabilitation Council of India with the slight changes suggested may be followed by special education teacher preparation centres in the future.
5. The Joint Committee recommended that the B.Ed. General Education and B.Ed. Special Education may be considered equivalent for career opportunities, salary, promotions, etc.
6. RCI and NCTE may appoint expert committees for preparing course materials for the capacity building programmes of general teacher educators to gain knowledge in special education.

This joint work of NCTE and RCI is just a beginning and there needs to be a strong collaboration between the two regulatory bodies for the betterment of special education teacher preparation thereby addressing

the human resource needs to serve the vast majority of unreached children with disabilities in India.

17.1 Inclusive Education – Its Implications for Teacher Education

Teacher education has witnessed a tremendous growth in the last decade. At present there are more than 5000 teacher education institutions at the secondary level and more than 8000 teacher training institutions at the primary level preparing teachers for general education. Over 8 lakh teachers are prepared every year but the number of teachers trained in special education is very minimal. Special teacher skills are same irrespective of whether a teacher works in special setting or in inclusive environment. The Census 2001 data reveals that the population of persons with disabilities is approximately 2.16% of the total population and this may be applied to general school population too. For addressing the educational needs of children with disabilities, at least 2% of the teacher force needs to possess specialised skills whereas the remaining should have undergone general sensitisation programmes on disability. It can be safely projected that at least 50,000 teachers for special education need to be prepared but the present rate is very discouraging. The RCI recognizes nearly 150 teacher preparation institutions in the country which hardly prepare about 3000 special education teachers every year. Therefore, the NCTE which deals with the larger system of general education should step in and encourage the general teacher preparation centres to launch teacher preparation programmes in special education. The joint intervention of the NCTE and the RCI in this regard may go a long way in addressing the much neglected field of special education teacher preparation in order to make inclusive education successful.

Article 24 of the UN Convention on the Rights of Persons with Disabilities projects work for persons with disabilities as a developmental activity. The article says that children with disabilities should have *access to qualified teachers* but the present scenario is far from satisfactory. Besides producing less number of teachers in special education every year, the field is confronted with the problem of high attrition rate among special education teachers. This is because of the fact that special education teachers in the country serving in inclusive settings are still treated on project mode and considered temporary staff whereas general teachers enjoy job security. The educational qualifications of both general teachers and special teachers are same and the curriculum and the pattern of teacher education courses too are similar. The NCTE-RCI Joint Committee which did an extensive comparison of the courses too observed more similarities than differences. Unless the special education teacher degrees are equated with the general teacher education degrees, promotion of inclusive education will be eluding the country which will have a larger implication of not achieving education for all by 2015. NCTE's intervention in this regard would go a long way to give a fillip to inclusive

education. When the teacher equivalence is ascertained, there will be demands for special education teacher preparation, which will make inclusive education a reality.

In summary, the NCTE may immediately introduce special education components in all teacher education preparation centres in the country and ensure that they are transacted by qualified teacher educators. Secondly, the NCTE may collaborate with the RCI to work on the equivalence of special education teacher degrees at par with that of the general education degrees for the purposes of career development, salary benefits, etc., in order to increase the retention rate of special education teachers.

The paradigm shift from "child as a student" to "child as a human resource" in the classroom paves way for comprehensive inclusion where every child has a place to perform:

- *By separating children with disabilities from the general system, residential schools emerged;*
- *By capitalizing on the abilities of children with disabilities, integration emerged;*
- *By looking at the child beyond his disabilities, the inclusion is emerging.*

Inclusion is all about effective education and by making the schools inclusive, the education becomes more effective.

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Chapter 8

Preparation of Vocational and Work Experience Teachers

C.K. MISRA

1. Work Experience

The introduction of work into educational programme is not new to Indian philosophy in general and educational process in particular. The roots of work education in India can be traced to Vedic period. In ancient India, when students lived in Ashrams or Gurukulas with their Guru, they had to perform all kinds of manual work for learning and living. Education was in fact related to life. In Vedic period, several "Centres of Learning" developed to impart work-centred education in an institutional set up. For example, eighteen trades were taught in Taxila.

1.1 Gandhi's Basic Education

During British period the need for introducing work education was advocated by various Committees and Commission on education. However, it was Gandhi, in the late thirties who visualized basic education (Buniyadi Shiksha) as a basic tool for the development of national consciousness and reconstruction of society. His concept of education through life, work and environment was a new contribution to the philosophy of education which has been accepted universally. Basic education aimed at providing education "through the medium of some productive trade or handicraft and to the extent possible, all other activities be built around the central craft, the latter being chosen in accordance with the condition in which the child is placed".

Backed by such a clear vision of National system of education, the seven provincial governments started setting up teacher training centres and opening schools to promote Gandhian pedagogy of integrating "world of work" with the "world of knowledge".

1.2 Education Commission (1964-66)

The Education Commission (1964-66) recommended that "Work Experience should be introduced as an integral part of all education" and defined it as "participation in productive work in the school, in the home, in a workshop or a farm, in a factory or in any other productive situations. Further, the commission stated "work experience is a method of integrating education with work. This is not only possible but essential in modern societies which adopt science based technology."

1.3 School Curriculum Frameworks (1975,1988,2000)

The three school curriculum frameworks designed by NCERT successively in 1975, 1988 and 2000 gave a place of prominence to work related education. Ishwar Bhai Patel Committee (1977), while reviewing NCERT's Ten Year Curriculum Framework (1975) observed that the curriculum should be capable of relating learning closely to society productive manual work and preferred to term "purposive, meaningful, manual work" as "Socially Useful Productive Work" (SUPW).

1.4 National Curriculum Framework (2005)

Work-centred education implies that the knowledge base, social insights and skills of children in relation to their habitat, natural resources and livelihood can be turned into a source of their dignity and strength in the school system. It is to be recognized as a meaningful and contextual entry point for organizing the curricular experience in the school. In this sense, the experiential base can be further developed through more evolved forms of work in the school, including social engagement. This pedagogy is expected to facilitate a child-friendly route to disciplinary knowledge, development of values primarily drawn from the Constitution and related to social transformation and the formation of multiple skills that are relevant for facing the complex challenges of a globalized economy. It is this educational process that calls for the application of critical pedagogy for linking the experience of productive and other forms of work with global knowledge.

1.5 Work Education as Pedagogic Medium

The introduction of productive work as a pedagogic medium in the school curriculum will have major transformative implications for various dimensions of the education system – philosophical, curricular, structural and organizational. Work-centred education will call for the reconceptualisation and restructuring of specific aspects such as academic autonomy and accountability; curriculum planning; sources of texts; teacher recruitment and teacher education; notions of discipline, attendance and school inspection; knowledge across subject boundaries, organisation of the school calendar, classes and periods; creating learning sites outside

the school; evaluation parameters and assessment procedures and public examinations. All this implies that curricular reforms and quality improvements are intricately linked to system reforms.

1.6 National Focus Group of NCERT on Work and Education

National focus group of NCERT on Work and Education has given the following suggestions for successful implementation of the work experience programme in schools.

- The curriculum of all teacher education programmes will have to be redesigned on the principle of cultural and epistemic transformation of both the teachers as well as the teacher educators. This implies that, as emphasized by the National Focus Group on "Teacher Education for Curriculum Renewal', the teacher has to be enabled to "understand children within social, cultural and political contexts" and "view knowledge generation as a continuously evolving process of reflective learning".
- Individual schools and clusters of schools would have to be empowered in terms of providing conceptual, academic, financial and administrative autonomy, essentially amounting to operational autonomy within a defined national framework.
- The school would have to be duly empowered to carve out 'work benches' (or 'work places' or 'work spots', as the case may be) in the neighborhood where the students could go to learn through work. Such an approach has three advantages viz (a) it will minimize capital investment (or make it unnecessary altogether) in the school; (b) the students will have access to the latest available technology and techniques at the 'work benches' rather than getting stuck with outdated technology at the school; and (c) what the children learn would be contextual and, therefore, be subjected to critical self- examination and reflection. Evaluation conducted by these 'work benches' will be duly recognized by the assessment system. For this purpose, a system of accreditation of 'work benches' would have to be evolved.
- The school system will create an appropriate space for engaging farmers, artisans (including those who have migrated to urban areas), health practitioners (including the village dais), persons experienced in animal husbandry, poultry, fishing, medicinal herbs, mechanics, technicians, folk artists, etc. as Resource Persons or Invited Teachers with the aim of utilizing their varied expertise, skills and insights (this will require appropriate action by NCTE as well).
- The present school day and school calendar will have to be made flexible and contextual in order to accommodate work

centred curriculum. A proactive and structured role of – the PRIs (or municipal bodies) VECs (or PTAs), Gram Sabhas and DIETs cannot be over-emphasized in this regard.

- Instead of the present arrangement of dividing the school into fixed classes and periods, the school will need to be reorganized in terms of multi-level, flexible and dynamic groups of children, encouraged to follow a negotiated time-frame. A group of children will be constituted on the basis of their common knowledge orientation and comparable skill levels, with a couple of them placed in the group to play a leadership role in the learning process. Such a group will pursue a common learning objective (or a set of objectives) for a while as a collective, disband itself after the objective has been achieved and then regroup with other children to pursue a new objective (the model developed by Digantar, Jaipur, may be studied in this respect).
- It is on this bedrock of work-centred education that 'vocationalised education' (to be distinguished form Vocational Education and Training) will be embedded at the secondary/ senior secondary stage for all children. Skill development for livelihoods/vocations in this framework will be correlated with knowledge acquisition and building of values rather than being viewed as an isolated objective.
- Such a work-centred programme of education will also lay a rational basis for the students to seek a dignified option of Vocational Education and Training (VET) courses outside the school system with the objective of pursuing a viable vocation/ livelihood in their lives.

1.7 Preparation of Work Experience Teachers

- Ishwarbhai Patel Committee (1977) emphasized the need of properly training teachers for implementation of SUPW programmes in schools.
- National Focus Group of NCERT on Work and Education (2007) observed that "Curriculum development is to be undertaken in both the pre-service and in-service modes for all types of teacher education institutions (DIETs, colleges of education, university departments) in order to prepare teachers for the work cultured pedagogy.
- As work experience should form an integral part of school curriculum, it should also be an integral part of the pre-service teacher education programme for elementary as well as secondary level.
- As per NCF (2005) the teacher education courses will have to address the question of cultural resistance among the teachers towards this pedagogy.

- As every teacher is expected to participate in the programme of work experience a massive in-service orientation programme has to be worked out with a time target phase-wise so that all the teachers are trained in this important area of work education.
- NCTE will have to play a proactive role accordingly in modifying its framework of faculty qualification as well as recognition and monitoring of teacher education institutions.
- Teacher educators may be oriented for conducting these programmes.
- In case of developing skills in specialized area, some specialist may be required. In such a situation the services of experts/ professionals may be utilized on part-time basis by giving suitable honorarium.

2. Vocational Education and Training

2.1 Historical Perspective

Vocational Education and Training (VET) occupies a central place in social and economic policy throughout the world. The last 25 years have seen a dramatic transformation in the world of work, changing not only the foundations of economies and social life but also the knowledge, skills and competencies that people require in almost every field of endeavour. Having this in view, efforts have been made to provide Vocational Education and Training through formal and non-formal systems in India.

2.2 Emergence and Growth of VE in School Sector

The need for introducing vocational education through diversification of general education was first advocated by Lord Wood in the year 1854. Later various Committees and Commissions on education during pre-independence as well as post-independence period emphasized the need for diversification of school education in India. However, it was Secondary Education Commission (1952-53) and Education Commission (1964-66) which made great impact on diversification of school education in India.

2.3 Multipurpose School: Diversification after Class VIII

The Secondary Education Commission (Mudaliar Commission 1952-53) put forward the idea of multipurpose school and recommended an 11-year pattern of school education. It offered diversification after eight years of schooling by providing training in various crafts/vocations. The Commission felt that at the end of this, a student should be in a position, if he/she wishes, to enter life and take up some vocation. A chain of multipurpose schools were established in response to these recommendations throughout the country.

2.4 Education Commission (1964-66): Diversification after Class X

The Report of the Education Commission (Kothari Commission 1964-66) made national development the chief concern of education. Its report entitled, Education and National Development starts with the significant sentence, "The destiny of India is now being shaped in her classrooms". The Commission suggested restructuring of education into a uniform pattern of education called the 10+2+3 pattern all over the country implying 10 years of general undifferentiated education for all, with diversification into academic and vocational streams at the +2 level. It gave priority in the plans of educational reconstruction to the Work Experience Programme (WEP) in general education and Vocationalization of Education Programme (VEP) at the secondary school level. This became a vital component of the National Policy Resolution on Education (1968) which envisaged silent transformation in the education system. The Commission, on the basis of the finding that 50 per cent of the +2 level pass students only go for higher education and the rest go out of the education system without any productive skills, recommended that at the +2 level, 50 per cent of the students should be diverted to vocational education within a period of 20 years. The situation has not changed even now.

3. Concerns of Vocational Education in Indian Context

Vocational education is an integral component of Indian education philosophy. The learning of trades and skills stood side by side with scholarly pursuit in ancient India, but the modern education system prevailing since the British period is characterized by a chasm between "learning" and "working." The educational system, established to raise manpower for routine clerical jobs in the British India, has remained generally unresponsive to Internal and external waves to change, thus posing a serious threat to meeting the country's manpower requirement for skilled personnel, particularly at middle levels. The concepts and philosophy of vocational education within the framework of general education has remained essentially a myth. However, the commitment of Government of India remains supreme and the recent national efforts bear testimony to it. Accordingly, the following concerns constitute the foundations of modern vocational education in India.

3.1 High Unemployment of the Educated

In spite of the fact that the ratio of participation in college education remains only a fraction of the corresponding figures in many western countries, a great body of educated manpower has emerged with little employable skills at its command. The growing millions of educated unemployed have forced educational planners to bring about greater diversification through employment-oriented courses.

3.2 High Rural Unemployment and Under-unemployment

The predominantly agrarian economy of the country engages nearly 70% of its population in the agricultural sector. This is marked by low per capita productivity along with high unemployment and under-employment in the rural sector. The need to augment income through supplemental vocations underscore the need for vocational education.

3.3 Imbalance in Professional – Technician Ratio

Greater emphasis placed on professional education in the field of engineering, technology, medicine and other specializations without much care given to preparation of supportive personnel has resulted in a situation where the professional to technician ratio is nearly 1:1. This is adverse to optimum utilization of professionals and hence, the need to correct the imbalance through vocational education.

3.4 Lack of Preparation for Self-employment

Employment for wages in the organized sector of the economy in India is limited to 8-10%. Self-employment and employment in small businesses account for the rest of the workforce. While nearly two-thirds of the workforce is directly self-employed, there is only a hairline separation between self-employment and employment for wage in small units. Educational experiences in schools offer little preparation for productive life as self-employed workers. Vocational education, therefore, naturally aims to raise the general skills level and entrepreneurial abilities of young people for more productive self-employment ventures.

3.5 Lack of Professionalism in Vocational Practices

In the absence of a proper vocational training and manpower supply system, the demands of the economy are met by workmen not properly trained or trained through informal modes of apprentice training. In the absence of proper training and theoretical education to support this practice, the over-all productivity suffers and the consumer of the services in such sectors as health, tourism and repairs of appliances, is left dissatisfied. Vocational education in such a context aims to bring professionalism and sophistication in trade practices.

4. Technological Changes Demanding Changes in Occupational Profiles

New technologies demand constant retraining and upgrading of skills. Generally, the supply of skills lags behind the demand which facilitates the entry of untrained personnel into every new area.

4.1 Lack of Relevance to Developmental Need

Many developmental activities of the government demand skilled manpower of a type the supply for which is either rudimentary or non-existent. Vocational education, therefore, is based on its proper linkage with such needs.

4.2 Vocational Needs of the Disabled

Vocational education must address the special needs of the disabled population so as to make them socially productive.

4.3 Vocational Needs of Women as a Special Group

Increasing participation of women in the modern workforce causes special demands for their vocational education. Vocationalization of education for women would tap vast human potential which can become a positive force for growth of the economy.

4.4 Vocational Needs of Educationally Backward Groups

Lower participation in education and in the economy by certain educationally backward social groups has to be offset so as to give them added status on the basis of the skills they possess.

4.5 Lower Productivity in Traditional Crafts

A large number of traditional crafts would face extinction if their workforce does not get proper return for the labour invested. Greater productivity per unit time and cost can come through proper technological and educational input. Metal work, woodwork, bamboo work, leather work, cane work, work in silk industry and a wide variety of prevailing handicrafts need preservation by making these activities more commercially attractive.

4.6 Explosion in Service-Oriented Vocations

Greater productivity in the primary sector and greater urbanization in general, promise an explosion of service-oriented vocations in the near future. More people, both in rural and urban areas, would become increasingly dependent on others to obtain a variety of services such as maintenance and repairs, agricultural consultancy and supplies, marketing, tourism and many others. Vocational education has to take roots in these community requirements of the future.

5. The NPE (1986) and the Emergence of Centrally Sponsored Scheme

Vocational Education in the higher secondary system under the 10+2 structure came into existence in the late seventies. A handful of states/ UTs like West Bengal, Tamil Nadu, Karnataka, Maharashtra, Gujarat and

Delhi took the lead. In addition, Pondicherry, Andhra Pradesh, Assam, Haryana and Uttar Pradesh also joined the stream during the pre-NPE (1986) years.

The National Working Group on Vocationalization of Education (Kulandaiswamy Committee, 1985) reviewed the VEP extensively and developed guidelines for the expansion of the programme. It defined the concept of vocationalization at all levels and recommended setting up of well-knit management system, establishment of linkages among different agencies offering vocational programmes, action plan for promotion of VEP in the country and liberal grants for attainment of the targets fixed. Its recommendations led to the development of the Centrally Sponsored Scheme (CSS) on Vocationalization of Secondary Education. The NPE (1986) put the target of 10 per cent diversion of students to vocational streams by 1990 and 25 per cent by 1995.

The adoption of the NPE (1986), its Programme of Action and the CSS on Vocationalization Secondary Education that followed led to the nation-wide coverage with 31 States and Union Territories currently in its fold. The Review Committee (1990) on NPE (1986) recommended 'Vocationalization for All". The revised NPE (1992) included Generic Vocational Course for students opting for academic stream at the +2 level. It kept for the vocational stream the target of 10 per cent diversion by 1995 and 25 per cent diversion by the year 2000.

5.1 Single Largest Programme in India

With the gradual expansion, the VEP at +2 level has emerged as the single largest programme of Technical and Vocational Education and Training in the country. It has a sanctioned enrolment capacity of more than 0.9 million in 6476 institutions offering 160 vocational courses in the areas of agriculture, business and commerce, engineering and technology, health and paramedical, home science, humanities and science in 18,709 vocational sections. Yet with less than 10 per cent coverage (actual enrolment 4.8 percent as per ORG report, 1996) against the 25 per cent envisaged by the turn of the century, a number of serious problems have been experienced in its implementation which bring a large number of fundamental issues into sharp focus.

5.2 National Curriculum Framework (2005)

– *National Policy on Vocationalization of Education*

The National Policy on Education (1986) as revised in 1992 accorded a place of high significance to vocational education and training at various levels of education. The national policy highlights the following features:

- Vocational education as a distinct stream at the higher secondary stage;
- Employability of vocational graduates;

- Reduction of the mismatch between the demand for and supply of educated manpower;
- Preventing aimless pursuit of higher education;
- An expansion of vocational programmes to cover health services, agriculture, marketing, business, industry and other segments of the economy; and
- A thrust *for* educationally backward sections and handicapped.

The Programme of Action of the NPE (1986) further highlights:

- Establishment of a proper management system;
- Development of various categories of manpower;
- Training of teachers;
- Development of instructional materials;
- Development of the school facilities; and
- Other steps for implementation.

The centrally sponsored Scheme on Vocationalization of Secondary Education (1988) presents a detailed plan for implementation by the states along with financial and administrative norms. Under the provisions of the Scheme, liberal financial assistance is being provided to the states.

– The National Curriculum Framework (2005) developed by NCERT and adopted by the CABE attached greater importance to work education in terms of its pedagogic value but disallowed streaming into Academic and Vocational Channels at the higher secondary stage. In this respect it was at variance with the National Policy of Education that clearly recommended streaming. NCF (2005) also disregarded UNESCO's reform of Secondary education that allows deferring streaming till as late as possible with certain safeguards. The document does not address VET issues as exhaustively as raised by the recommendation of the second international conference on TVET. However, according to NCF vocational education and training be implemented in a mission mode involving village cluster and block to sub-divisional/district town and metropolitan areas in collaboration with the nationwide spectrum of facilities in this sector.

6. The National Knowledge Commission on VET

The Commission considers VET as an important element of the nation's education initiative. In order VET to play its part effectively in the changing national context and for India to enjoy the fruits of demographic dividend, there is an urgent need to redefine the critical elements of vocational education to make them flexible, contemporary, relevant, inclusive and creative. It further recommends the following strategies:

- Place Vocational Education entirely under the Ministry of Human Resource Development.
- Increase the flexibility of VET within the mainstream of education system.

- Quantify and monitor allocation to VET
- Expand capacity through innovative delivery models.
- Enhance the training of options available for the unorganized and informal sector
- Strengthen the current institutional structure.
- Ensure the robust regulatory and accreditation framework.
- Ensure proper certification
- Undertake a rebranding exercise.
- The quality as well as image of VET needs to be actively promoted so that it is viewed as comparable, relevant and as general secondary education.

7. Thrust in the 11th Five Year Plan

The approach paper on VET in the 11th five year plan has given the following thrust areas:

- The thrust would be to provide VET to all those who need skills for sustainable livelihood and to meet the challenges in the world of work.
- The concept of Vocational Education and Training to all will be promoted through the formal and non-formal system. It will cater to the needs of different target groups, with special provisions for the people of the disadvantaged groups viz girls/women, scheduled castes, scheduled tribes, persons with disabilities, unreached etc.
- The emphasis in VET would be on the development of generic and multiple skills so that workers could respond to the changes in technologies and market demands.
- Vocational Education Training (VET) would focus on development of generic, personal and technical skills for productive and satisfying careers. Generic skills that cut across a number of occupation would enable an individual to transfer from one field to another during his/her working life.
- VET programme will induce, among others, critical thinking, transfer of learning, creativity, communication skills, aesthetics, collaborative functioning, entrepreneurship, social accountability and marketing.
- VET programmes preparing for occupation in Farming, Artisan Trade, Crafts, small and medium enterprises, particularly for self-employment would include entrepreneurship training, information and communication technology to enable them to take responsibility for production, marketing, management and rational organization of the Enterprise.

Vision

To prepare competent workforce in consonance with the global standards for meeting with skilled manpower requirement of the world of work.

Mission

To provide quality and need-based vocational education and training for all.

Budget Estimate

The approach paper has projected a total of Rs. 11,544 crores as budget estimate for meaningful implementation of VET in the XI Five Year Plan. The cost estimate for Training of Teachers/Trainers is Rs. 50 crore.

8. Vocational Teacher – Present Status

Presently, pre-service training for vocational teachers is practically non-existent, in-service training is not adequate and competent vocational teachers are often not available in desired numbers. Teachers' training, therefore, requires a priority attention.

- The CSS provided for two types of teachers: full-time and part-time. The part-time teachers as per CSS norms should be professionals working already in specialized fields and their services are utilized on part-time basis for skill training. However, this has been wrongly implemented by many states. Generally, they appoint freshers without any professional experience.
- The full-time teachers, by and large, lack any industrial experience and are hardly aware of the changing work place requirements at present, much less so, for the future. Facilities for a teacher preparation programme even on a small scale do not exist and it is not feasible to organize large scale programmes for want of proper base, infrastructure and prototype.
- Teachers' turnover rate as observed by ORG was very high as qualified professionals (full-timers) were not getting retained at their salaries. Majority of the state governments have shown reluctance towards appointment of full-time staff because of their unwillingness to take on a long term committed liability in case of closure of the scheme.
- Large scale transfer or deputation of teachers has been made from the general stream to vocational stream without adequate consideration given to technical merit. Part-time teachers were found not only less qualified but they also lacked experience in actual job situation.
- The programme of Action (1992) visualized a phased and well structured programme of pre-service teacher training to be

drawn and implemented. By the end of the 8th Plan, 1,600 teachers were expected to be given pre-service training. This has not materialized.

- According to POA (1992), it was also planned to impart in-service training to 12,000 teachers by the end of 8th Plan, which also did not materialize.

At present only in-service short-term teacher training of one month duration is conducted by PSSCIVE for full-time teachers. Except one university in UP (Ruhelkhand, Bareilly), there is no other institution conducting pre-service vocational teachers' training programme. The programme of above university is in the form of one-year B.Ed. for graduate teachers in the areas of Commerce and Home Science.

8.1 Absence of Vocational Teacher Education Programme

Absence of pre-service vocational teacher education programme has been universally acknowledged. The Programme of Action (1992) stipulated that a phased and well-structured programme of pre-service teacher education will be drawn by CIVE and implemented in RCEs on a priority basis. In spite of this, no action has been taken so far. It would be interesting to find out the reasons for absence of vocational teachers training programme.

8.2 Regional College Experiment

Historically, a vocational teacher education programme was started by NCERT in collaboration with USAID in the year 1963-64. Four Regional Colleges of Education were established in four regions of the country at Ajmer, Bhopal, Bhubaneswar and Mysore mainly to prepare teachers for multi-purpose schools in various practical subjects as part of implementing the scheme recommended by Secondary Education Commission (1952-53). These institutions offered a variety of teacher preparation programmes for major broad areas, namely, technology, agriculture, commerce, home-science, fine arts with the best infrastructure visualized for the success of such programme.

There were one-year degree courses, two-year degree courses, four-year integrated course and three-year diploma course in teacher education.

According to the history of these courses, the multi-purpose system could not be continued and the course offered in RCEs had to be discontinued. This was further accentuated by the recommendation of the 10+2 pattern by the Education Commission (1964-66) which recommended diversification into academic and vocational streams at the end of class X. Unfortunately no teacher development programmes were developed in the RCEs in support of this. Because of this lackadaisical approach to a priority area of educational concern, it gave a setback to the whole movement of teacher preparation for various vocational sectors

as referred to above. The faculty and infrastructure created for the purpose in these colleges got substantially eroded over the years.

8.3 Reasons for Non-establishment of Teacher Education Programme

The followings are some of the reasons for the non-establishment of any vocational teacher education programme in the country:

- Vocational education is a rather new concept and practice under the general education system in spite of several experiments to this effect conducted in the past.
- University autonomy, with a complicated decision making process, is another constraint. Even the general teacher education programme is a mere appendage in the university set up. The Departments of Education have been devoid of orientation to and specialization in vocational education.
- There are many problems, which restrict the launching of well thought out and properly designed teacher preparation programmes for vocational education. One of the most important problems is lack of sound policies and long-term commitment of the policy makers and officials to pre-service vocational teacher preparation courses of substantial duration in view of their longer gestation period. At the same time, it is also true that requisite facilities for teacher preparation programme cannot possibly be organized in the absence of proper infrastructure and prototype. Moreover, the industry also does not recognize the competencies developed through teacher preparation programmes and do not have desired interest in vocational education as such.
- The country does not have a "prototype" or a "model" to emulate within the country.
- There is a general inertia in the field of teacher education to meet the emerging demands.

9. Functions of Vocational Teachers

- Vocational teachers play a key role in achieving the objectives of vocational education by developing employable vocational skills in the students both for wage and self-employment. The main emphasis in vocational education is given not only on the development of knowledge, skills and attitude (personality traits) pertaining to specific vocations but also on the development of entrepreneurship skills for self-employment as wage employment has limited scope. Hence, vocational teachers are responsible not only for inculcating knowledge, skills and personality traits but also for preparing students to become skilled workers or technicians and entrepreneurs who can fulfil the social requirement of employment vis-á-vis development.

- In the above context, the role played by the vocational teachers surpasses the scope of simply teaching which is normally in the case of teachers of academic stream. In vocational education, curricular transaction takes place in three phases: (i) education and basic skill training in schools; (ii) specialized skills training in collaborating institutions; and (iii) on-the-job training. The Vocational teachers are involved in all the above three phases by way of teaching as well as coordination and organisation.
- The PSSCIVE Guidelines 'On Teacher Preparation' highlight that the teacher is the principal means for implementing the vocational education programme and is responsible for organizing variety of related activities both within and outside the institution. A vocational teacher, in addition to being a specialist in his/her curricular area, would require a set of general competencies which are non-occupation-specific. Such occupation neutral competencies, as a matter of fact, cut across various vocational fields but at the same time are related to the multi-faceted roles and responsibilities of the vocational teacher. These roles, among other things, include establishing resource centres, training through latest instructional techniques, emphasizing self-learning and evaluation, encouraging creativity among students, establishing effective and functional school-industry linkages, ensuring proper placement of students and the like.
- The Vocational teacher actually occupies a pivotal position as a link between the industrial society – world of work – and the educational system. He must understand his students as individuals knowing how they learn best and how he may best transmit his own skills and knowledge in order that they be educated and not simply trained. He must pursue his own studies, both technical and pedagogical throughout his career and see the process of learning as a lifelong one.
- As per UNESCO document 'New Directions in Technical and Vocational Education', the roles and functions of teachers are undergoing radical transformation. The compulsions of advance technology leading to restructuring in industry and economy, reorganization in workforce and reformulation in technical and vocational education are accelerating the process of transformation.
- On the basis of the above description, the functions of a Vocational teacher may be enumerated as below:
  - Course designer
  - Curriculum developer
  - Resource material producer
  - Performance evaluator

- Student guide and counsellor
- Facilitator of learning and skill development
- Community worker
- Liaison Officer
- Placement Officer
- Educational Manager
- Coordinator and Organizer

9.1 CSS and Vocational Teacher

The Centrally Sponsored Scheme (CSS) on vocationalisation of education has made a provision for full-time as well as part-time teachers to carry out instructions and training required in each vocational course.

Full-time teachers are required to work in their institutions whole time and are expected to teach as well as coordinate the general organisation of the instruction and also the work of the part-time staff.

As the designation denotes part-time teachers are deployed only for part of the time in the institution and not as a cadre of the school teacher. The heads of the vocational institutions are given a free hand to appoint part-time teachers as per guidelines provided by the state government within the provision of CSS. Their appointments are temporary on periods basis for particular duration varying from one week to one academic session depending upon the requirement. Mainly, they are appointed to train the vocational students in that particular vocation. The scheme visualizes that the full-time teacher will be wholly responsible for theory classes and partly for practical training. Practical classes or training will be imparted by the part-time teachers. But it depends on the administrators of the institutions whether they utilize their expertise for practical work, theory or for both. Some states at present are running the vocational programmes only through part-time teachers as the full-time teachers have not been appointed. On the other hand, some states have provided only full-time teachers.

9.2 Teachers' Qualifications

In principle, the status of the vocational teachers should be of the same rank as that of the academic stream, therefore, their minimum qualifications should also be of the same level. As per recommendations of the CSS, the minimum qualifications for selection of full-time teachers are as follows:

Qualifications for full-time teachers vary with reference to each group of vocational courses and availability of qualified persons at the salaries prevalent in the school system. Generally, a master's degree is the basic qualification for selection of full-time vocational teachers. In course, for which postgraduates are not available (like Medical and Technological areas), degree or diploma is the minimum basic qualification for the purpose. The vocational curricula developed by PSSCIVE mentions about

the teaching staff and their qualifications. The selection procedure is the same as that of regular teachers in other areas, only preference is given to those who have more experience in the practical field of the vocation.

10. Who should be a Part-time Teacher?

A person with good practical background should be appointed as part-time teacher. Part-time teachers should be identified from amongst professionals in the concerned vocation, even though they may not have formal qualifications (degree/diploma or a teacher training certificate). The collaborating institutions should be the main source of supply of part-time teachers. In addition, retired people from different vocations can be employed on part-time basis. It was visualized that experienced professionals already in the job in their own fields would be utilized to impart needed education and training to the vocational students by serving as part-time teachers. This arrangement serves many purposes. First, it solves the problems of non-availability of vocational part-time teachers, secondly, experienced hands become available with less cost, but better return. Besides, the students also get acquainted with possible future employers as well as their areas of activities.

10.1 Honorarium

The honorarium to part-time teachers is suitably determined by the state government (about Rs. 1,000 to Rs.1,500 p.m.) or on per day basis to attract better quality of experts and it varies from vocation to vocation and state to state. It needs revision in the context of present pay cost of living.

10.2 Present Status

- In the implementation of vocational education programme a great deal of variation is found in the qualifications of both part-time and full time teachers appointed by different implementing states and union territories.
- Vocational staff in the schools has not been appointed as provided in CSS. Even full-time teachers with required qualifications are not appointed in many states. They have changed the basic qualifications for appointment as full-time teachers according to the availability of the candidates. Some states have diverted the existing teachers who do not possess the requisite qualifications to the vocational stream. Some states have managed to get expert teachers from concerned departments on deputation for the vocational stream.
- The provision of part-time teachers under CSS is being mis-utilised by majority of the implementing states as they are appointing fresh unemployed graduates as part-time teachers.

Appointment of such persons as part- time teachers is against the norms of CSS.

10.3 Preparation and Training of Vocational Teachers

- The Report entitled 'Learning to Do', states that unless a teacher is prepared by way of pre-service and in-service education to take up these new challenges of education, the objective of +2 reform will remain a non-starter. Preparation of teachers is a continuous process and its pre-service and in-service components are inseparable.
- According to the PSSCIVE 'Guidelines' on Teacher and Teacher Preparation' the nature of vocational courses and their objectives place special demands on the vocational teachers. They require, in addition to theoretical knowledge, an intensive training in practice of the vocation. They should be well conversant with the special methods of teaching vocational subjects in the classroom and also on the shop-floor, laboratories, farms or factories. One of the important aspects of vocational education is its emphasis on entrepreneurship and self-employment. This makes it imperative that teachers should also be competent in dealing with various facets of this relatively new but important area. They would, in addition to imparting vocation-specific knowledge and skills, be required to instill in students the desired personal qualities of self-confidence, problem solving, innovation and risk taking.
- Further, it becomes obvious that untrained Master's degree holders especially in the vocational areas of agriculture, commerce and home science will not be able to do justice with the courses and their transaction mainly because of the purely academic nature of their university education. Such persons before being absorbed as vocational teachers would be required to undergo an intensive vocational teacher training programme with adequate pedagogical skills suited to the specific needs of vocational education.
- The UNESCO recommendation concerning vocational education states that besides training an individual for a given occupation by providing necessary skills and theoretical knowledge, it should also provide for the development of personality and character and foster the capacity for understanding, judgement, self-expression and adaptation to varying environments.
- Vocational teachers, to be effective, must have competency in curricular transaction and should have a positive approach towards typical field problems. They should have a clear understanding of the aims and objectives of the scheme of

vocationalisation and its philosophy. Vocational teacher should have knowledge about all aspects of vocational education, e.g., CSS, vocational survey, management structure for vocational education, infrastructure and facilities for vocational education, school-industry linkages, on-the-job training and apprenticeship training. Teachers should also know how the curriculum and instructional material for the vocational course are being developed. Vocational teachers must have the knowledge about the teacher factors too, e.g., types, selection, development and retention. All these components should be included in the training of teachers. Teachers should be trained not only in practical skills but also in teaching-learning and evaluation procedures. Vocational teachers should be able to evaluate the students' performance. Hence, they should also be trained to develop evaluation tools and item banks for evaluation of vocational competencies. They should be specifically trained how to develop observation schedules, checklists and rating scales to measure process skills, product skills and personality traits.

- According to NCERT document, 'Higher Secondary Education and Its Vocationalisation', special teacher training or orientation programmes will have to be designed, including not only pedagogic training but sometimes training in specific skills and technologies. The part-time staff having highly professional qualifications would also require orientation in instructional techniques and evaluation. The full-time teachers would require periodical re-training to keep them abreast of the latest practices. They are likely to face during their tenure as vocational teachers a situation where they would require re-training in allied specialization due to the changing nature of vocational course resulting from the changes in the job pattern.
- The whole programme of teacher preparation, therefore, needs to be designed such that the teacher-to-be is able to adjust to these changing demands with minimum effort and training. Of course, such adjustment is possible only within one broad family of vocations. In the absence of such in-built flexibility, the full-time teachers are likely to degenerate into a liability rather than an asset to the institution.
- CSS visualized that to meet the requirement of training, a centrally coordinated programme of short-term teachers' training will be organized using the available infrastructure in organizations like the RCEs, ICAR institutes, agricultural universities, central training institutes, bank training colleges, medical, colleges, home science institutions, Technical Teachers' Training Institutes, selected Secondary Teacher Training Colleges, etc. The PSSCIVE may act as the principal coordinating agency for the training programme.

- There is a provision of in-service training of full-time teachers in CSS. Periodical in-service training of vocational teachers is an essential element for improving the competency of teachers. Programme of training of teacher is one of the major activities of PSSCIVE. The PSSCIVE conducts in-service programme in specific vocations on all India basis which is generally conducted in reputed national level professional institutions.
- A large number of courses of short-term teacher training will have to be organized to meet the requirement of training. The state would work out their requirements, vocation-wise and on the basis of this data the PSSCIVE will identify the institutions and chalk out a suitable programme for three to four weeks depending on the needs and requirements of the teachers in different vocational areas.
- To meet the long-term needs of qualified competent vocational teachers, CSS visualized that special pre-service teacher training programmes will be developed and introduced in selected institutions like RCEs and TTIs at the regional level and well-equipped Secondary Teacher Training Colleges at the state level. Necessary steps will also be taken to strengthen and equip these institutions in a phased manner. Two-year courses for graduates, diploma holders and four-year courses for higher secondary students in teacher education in different areas of specialization are visualized for providing a continuous steady supply of vocational teachers. It is suggested that employer should give preference and additional incentives to students with pre-service training at the time of recruitment.

Pre-service teacher training programme as proposed in CSS has not materialized anywhere in the country so far. It is proposed to start the programme on experimental basis in some vocations in the Regional Institutes of Education.

10.4 New Thrusts in Vocational Teacher Preparation

Education in general and teacher preparation in particular, in majority of the cases, are limited to the four walls of the school/institution. It has traditionally focused, if not exclusively, on providing knowledge and to lesser extent on exposing to the world of work. Students as well as teachers depend more on books and on teacher educators though education lays emphasis on providing equal inputs in terms of all the three domains of learning – cognitive (knowledge), psychomotor (skills) and affective (attitudes). However, in majority of the situations more weightage is given to theoretical instructions (cognitive learning) and learner assessment is largely based on written examinations.

The Delors Commission (1996) believes, 'The next century would provide unprecedented means for communication and for the circulation

and storage of information which would impose a demand on education that it must transmit efficiently and on a massive scale, an increasing amount of constantly evolving knowledge and know-how adapted to a knowledge driven civilization. Similarly, 'each individual whether a student or a teacher must be equipped to seize learning opportunities throughout life, both to broaden his knowledge, skills and attitudes and to adapt to a changing, complex and inter-dependent world.'

The Delors Commission (1996) is also of the view that if education is to succeed in its tasks, it must be organized around four fundamental types of learning which, throughout a person's life, will in a way be the pillars of knowledge: learning to know; learning to do; learning to live together; and learning to be which proceeds from the previous three types of learning. It further believes that a broad, encompassing view of learning should aim to enable each individual to discover, unearth and enrich his or her creative potential to reveal the treasure within each of us.

10.5 Integration of Knowledge and Skills

In order to make learning more realistic, joyful, useful and rewarding in our life, the present day cognitive learning should derive strength from the surrounding world of work. Such learning would call for reorganization of teacher preparation curricula in collaboration with stakeholders in industry, curriculum developers and vocational teachers with a sound school-industry linkage as part of the curriculum transaction method. Incorporation of on-the-job training as a compulsory component of the curriculum would go a long way in facilitating interaction between learning and the world of work. Arrangement of apprenticeship training facilities in the desired industry can further strengthen interaction. This means that the community and industry shall have to play an enhanced role as important stakeholders in TVE, if it has to meet the twenty-first century's requirements.

11. Information Technology, Environmental Issues, Foreign Languages and Vocational Education

11.1 Information Technology

In the human history, no work of science has so comprehensively left impact upon the course of human development as Information Technology (IT) has done. It is going to play a very significant role in changing every aspect of human life – communication, services, manufacturing, trade, information, entertainment, education, research, national defence and global security. Information technology is breaking old barriers and making new bridges between the countries, communities/ societies and individuals. It can be used as a tool for making strong, prosperous and self-confident individual or a country. It also offers opportunities for revolutionizing the procedures of providing technical and

vocational education and training programmes. Distance learning, tele-conferencing and video-conferencing are some of the examples. In view of all these, information technology should be utilized in providing vocational education and training and making it cost-effective and readily available. Its use can make technical and vocational education far more accessible.

11.2 Environmental Issues

Man's fate is bound up with his environment. He/she derives not only his physical sustenance – air, water, food, fibre, fuel, shelter from the environment but also the means of social, intellectual, moral and spiritual growth.

There is a global concern for the increasing incompatibility between the depleting environmental resources and exploding population growth. To face this challenge, there is no other alternative than sustainable development through checks and balances on resource use, individual and societal demands.

Environmental issues became so important by early eighties that first Inter-governmental Conference on Environmental Education was organized in 1977. The Conference recommended inclusion of Environmental Education in all teaching-learning situations to cater to all ages and socio-professional groups in the population. Another Conference which was held in Rio-de-Janeiro (1992) laid emphasis on 'sustainable development' for future survival which is also a philosophy of Indian Vocational Education. Environmental Education for technical and vocational education students and providers is important from the following viewpoints:

(i) they participate in the development and production processes which influence human environment; and
(ii) they are themselves directly affected by the environment.

Therefore, it is essential that each and every technical and vocational education curriculum/programme should compulsorily include environmental issues on one hand and the concept of sustainable development, on the other.

11.3 Foreign Languages and Culture

It is believed that with globalization, skills shall have no boundaries and those having skills passport will receive Visa on priority basis in the twenty-first century. Export-import business and higher education would require knowledge of foreign languages. This would also be required by those with skills who would like to migrate to other countries in search of suitable jobs. Similarly, globalization would also have impact on the culture. Foreign music, use of jeans and fast food chains of restaurants have already made an impact on our culture. With improved communication and information technology, the impact of foreign languages and culture

would be further felt by every one. Learning of foreign languages may become inevitable for those who wish to migrate with their skills. In view of this, the TVE curricula should be reorganized in such a way that foreign languages and certain aspects of culture could be incorporated whenever necessary.

Employment pattern is fast changing around the world. So far, the manufacturing sector was the single most important sector offering large number of wage employment opportunities. But, the opportunities in this sector have started shrinking because of infusion of significant amount of hi- technology. In other words, hi-technology is reducing wage employment opportunities in the manufacturing sector but shall create additional jobs in service and maintenance sector. It is estimated that the service sector alone would provide employment opportunities to the extent of 40 per cent of all employment opportunities around the globe. Similarly, quite substantial opportunities are offered by self-employment and employment in small enterprises which means that these two areas are becoming important from the point of view of employment opportunities in future. It is believed that self-employment requires significant dose of entrepreneurial skills for identifying opportunities, developing small business ideas and personality traits and for interacting with people and resources to generate wealth for the country. Since, these skills are considered essential for self-employment, these will have an impact on the structure and design of all technical vocational education curricula including vocational teacher preparation programmes. Therefore, there should be a strong component or weightage to entrepreneurial skills in all technical and vocational education and training curricula, irrespective of the target group, in future.

12. Vocational Education as a Distinct Field of Teacher Education

Vocational education must emerge as a distinct field of teacher education. With its roots deep into the major vocational (programme) areas, it has to be viewed as being distinct from a narrow occupational skill-based programme. There is a danger of losing the commonality of vocational education in the process of a narrow disciplinary approach. Vocational education must be presented as a coherent whole to the teacher and other field personnel. In this regard, it may be kept in view that:

- There may be common competencies for widely varying vocational fields in terms of marketing, production, enterprize management, production or services.
- Vocational workers in an area need to work with workers in many other occupational areas.
- A broad teacher preparation may lead to greater adaptability in teaching and guiding vocational students.
- There would be a considerable increase in efficiency and economy in teacher preparation.

- A better understanding of vocational education as a whole would enhance the teachers' opportunities for promotion and career advancement.

In order to achieve the objective of presenting vocational education as a coherent whole, it may be important to:

- determine commonality of principles and content which may extend to production education, transportation education, distributive education, cooperative education, environmental education, entrepreneurial education and others;
- build on commonalities through across-the-board general courses like:
  - Theory (philosophy and foundations) of vocational education.
  - Principles and practices in vocational education.
  - Organization and administration of vocational education.
  - Research methodology in vocational education.
  - Contemporary problems and issues in vocational education.
  - Principles and practices of cooperative education (linkages with business and industry).
  - Evaluation in vocational education.
  - Teaching methodology in vocational education.
  - Use of educational technology.

12.1 Organizational Structure for Teacher Education

The following institutions, which are not concerned with vocational teacher preparation at the moment, may be considered for their possible involvement in the preparation of vocational teachers.

- Centre for Advanced Studies in Education (CASE), Gujarat, Baroda.
- Regional Colleges of Education (NCERT).
- University Departments of Education.
- Colleges of Teacher Education.
- District Institutes of Education and Training (DIETs).

Of the types of institutions listed above, the four Regional Colleges of Education under NCERT could be assigned the task of pre-service preparation of vocational teachers as the first set of institutions. These institutions were created in the mid-sixties with the primary purpose of preparing teachers for the then existing vocational education programmes in many states of the country under the name of "Multipurpose Education." However, the multipurpose scheme was closed down only after a few years of its inception and the colleges gradually assumed the task of preparing teachers in languages, social sciences and sciences besides

having advanced education programmes at Master's and doctoral levels. The current national thinking is to revive the original character of the colleges by augmentation of faculty and infrastructure. As a first step, each college should start a model teacher education programme in a vocational area. This model would be demonstrative for other colleges in the country rather than aiming to meet the large scale demands. It may be mentioned that unlike other colleges in the country which offer one-year B.Ed. programme, these colleges offer four-year integrated teacher education course besides one-year B.Ed. course.

Besides these colleges, new institutions may be set up or some of the existing colleges strengthened to take up the task of vocational teacher preparation. One college per state may be a good beginning.

Some states are in favour of establishing new Regional Vocational Teachers' Training Institutes on the pattern of Regional Technical Teachers' Training Institutes concerned with the training of the teachers of technician education system of the polytechnics.

12.2 Curriculum Framework

Role Expectations of Vocational Teacher

A curriculum framework for Vocational Teacher Education programme requires enunciation of the Role Expectation of Vocational Teacher. The concerns of Vocational education and functions of vocational teachers discussed earlier may lead to the delineation of role expectations of vocational teacher. They may be enumerated as below:

- Understanding the characteristics of learners and significance and foundations of vocational education so as to make the students more receptive to vocational education.
- Acquainting students with the nature of job market and economic opportunities – its changing profile and guiding them in job placement or self-employment.
- Developing liaison with the industry/employment sector.
- Organizing learning activities in a programme area.
- Developing/adapting curricula and performing co-coordinating functions in curriculum development.
- Developing and using multimedia packages.
- Adjusting his/her role to meet the needs and demands of diverse socio-economic and cultural groups.
- Developing liaison with administrators and planners.
- Minimizing the drop-out rate and optimizing utilization of available facilities/resources.
- Remaining alert to changes in one's own occupational field of specialization.
- Conducting evaluation.

On the basis of the listing of role expectations, an attempt may be made to link them with the courses, on the one hand, and the structure of training programmes, on the other.

12.3 Competency Based Curriculum

It is important to emphasize that for the teachers to perform their expected role effectively, the content of each course should be drawn on the basis of task analysis so that the teacher education programme could be given a thorough competency-based orientation. The teacher educators within the country should be trained to undertake the work of task analysis for identifying the teacher competencies in the country's set up and then proceed to develop learning packages for the teacher trainees. This may take several years but a beginning in this direction is immediately called for.

12.4 Performance Based Teacher Education

To organize Performance Based Teacher Education (BPTE), the National Centre for Research in Vocational Education, the Ohio State University, Colombus, Ohio, has developed a set of self-learning modules. These have been published by the American Association for Vocational Instructional Materials (AAVIM). These modules may serve as useful prototype for the development of Indian Literature. Some of these may easily be adapted to suit the Indian conditions.

12.5 Proposed Model of Teacher Education Programme for Vocational Teachers

A model of Teacher Education Programme developed by the Department of Vocational Education, NCERT, seems relevant in the present context. The model is based on the model of university of Georgia's programme of teacher education with certain modifications to suit Indian conditions. The salient features of the proposed model are:

- There are five-year integrated programmes providing multiple entry points (five in case of Agriculture/Home Science/ Business and Commerce and four in case of Engineering and Technology/ Health and Para-medical.)
- Higher secondary academic as well as vocational stream graduates are entitled to the entry in the first year.
- B.Sc. Gen. and Honours graduates of relevant disciplines can enter the second year of the programme.
- B.Sc. Agriculture/B.Sc. Home Science/B. Com. graduates can directly enter the third year of the programme and those in Medicine, Pharmacy, Engineering, Technology, etc., can enter the fourth year of the programme.
- All students who have successfully completed the graduation

requirements for the first three years would be promoted to the fourth year.

- All graduates with Bachelor of Vocational Education (B. Voc. Ed.) degree would be eligible to enter the Master of Vocational Education (M. Voc. Ed.) programme, either directly or after a specified number of years of in-service experience.

The five-year programme would offer two degrees:

- At the end of the fourth year – a B.Voc. Ed. Degree in all areas.
- At the end of the fifth year – a M.Voc. Ed. Degree in all areas.

The course content for each year would be as follows:

- 1st Year: Basic core courses of science, social science, mathematics, languages, etc.
- 2nd year: Area core courses in the chosen programme area without specialization.
- 3rd year: Area core courses in the chosen programme area without specialization in case of health and engineering and technology areas.
  Vocational Specialization courses corresponding to the programme of specialization in AG./H.S./B and C areas.
- 4th year: Professional teaching, foundations and other pedagogical courses common to programme areas as well as general and area specific methodology of teaching courses.
- 5th year: Higher level courses corresponding to the fourth year courses, statistical methods, research methods, directed research, etc.

13. Organizational Structure

A part of instruction in areas cannot be organized in the colleges of education for a variety of reasons – traditional, economic, instructional, etc. The location where the courses are offered and related competencies developed would be follows:

- 1st year: In colleges of Education (base institution) by arranging for part-time faculty, if necessary.
- 2nd year: In base institutions for Agriculture/Home Science/ Business and Commerce but by attachment through cooperative arrangement with another College for Engineering and Technology/Health and Para-medical.
- 3rd year: By attachment in proper university department with the facilities to offer specialization needed.
- 4th and 5th year: In base institution by augmenting the existing faculty for the corresponding courses.

The proposed structure would offer the advantage of meeting a part

of the immediate requirements within the shortest period of one year, developing into a four-year model over a period of time and developing a cadre of teacher educators within a short period of two years. It would provide a flexible entry mechanism and also allow for pooling of groups to offer certain courses in different years of the ladder, particularly I, II and IV, thereby making it more cost-effective.

Those willing to go for planning, management, supervision and administration as well as higher level curriculum development positions, may be required to complete the M. Voc. Ed. Degree.

14. Recommendations

It is suggested that NCTE may keep the following recommendations in view while developing the new curriculum framework:

- A phased and well-structured programme of pre-service teacher training may be drawn by the PSSCIVE and implemented in Regional Institutes of Education (RIEs) on a priority basis. The pre-service training would gradually be extended to other suitable institutions such as agricultural and generic universities. Historically, RIEs were established for preparing specialized teachers for multipurpose schools in the area of Agriculture, Commerce, Technology, Home Science and Fine Arts. They have the necessary infrastructural base which could be updated with additional inputs and become model institutions for pre-service as well as in-service training of vocational teachers in the country. Cost-wise also, this will be more economical than any other model.
- In-service courses may be organized by the states in selected professional institutions on the basis of guidelines provided by the PSSCIVE in terms of duration, content and methodology. The PSSCIVE should continue to conduct in-service training programmes on national or regional levels in collaboration with other expert institutions.
- The State Department concerned with Vocational Education may also evolve schemes to utilize resources in institutions such as those under Khadi and Village Industries Commission, Krishi Vigyan Kendra, Farms, Hospitals, Business Houses, etc. for training vocational teachers on part-time as well as on full-time basis.
- Distance learning can be utilised on a large scale so that teachers are not displaced in time and space from their institution. Periodic refresher courses may be provided through open learning systems.
- Teacher preparation would have to function in close cooperation with industry/employment sector in order to ensure relevance at all time and, therefore, representatives from such

organizations should be involved in formulation of teacher preparation programmes.

- Modular teacher preparation courses with add-on character in a flexible delivery mode may be more suitable for training vocational teachers. An extra advantage of this would be that the same modules may be used for pre-service as well as in-service training programmes.
- Multiple-entry and exit provisions in a teacher preparation programme based on recognition of prior learning and requirement of the job may ensure greater flexibility.
- Suitable financial provision should be made to ensure services of well qualified professionals who are not attracted by the prevailing rate of remuneration.
- Full-time teachers must be appointed on regular and permanent basis as is the case of Academic stream teachers so that uncertainty about their continuity is removed. It is only in this situation that we can expect full commitment of the teacher in implementing the programme. There is an argument given by states that in case of closure of a vocational course, how the services of the full-time teacher could be utilized? The fear is based on wrong assumptions. For example, an M.Com. or M.Sc. Home Science or M.Sc. Agriculture will be useful for various courses and with some retraining may be useful for some other courses also. It is only the part-time teacher, who needs to be replaced by another part-time teacher depending on the need of new courses.

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Chapter 9

Preparation of Teachers of Art Education

BHULESHWAR MATE

1. Background

Art education of the child begins with creative and aesthetic activities. Aesthetics is considered as a part of value system of individuals. Further, art and culture are also considered as lifeskills because they enrich lives of individuals. The study of different arts, dance, music, theatre, etc. gives a character of nobility and generosity which spontaneously finds expression in the behaviour, for example, colour plays a very vital psychological role in human behaviour. Art is also accepted as therapy for the growth of an individual. Culture is depicted by various art forms and art activities like visual arts and performing arts, traditional arts and crafts which distinguish the cultural fabric of the society.

In most organizations, people matter the most. In educational institutions it is all the more so, as influencing young students, moulding their thoughts and career, if carried out by wrong people, can lead to disastrous consequences. The institutions in most cases do not encompass change as an opportunity for growth. Change is often necessitated as the environment has changed, expectations have changed and technology has changed. It is often found that in response to the above mentioned changes, the internal organization has not changed, the people have not changed and the processes have not changed. It is important that the people involved understand the need for change and accept the change as a necessary trigger for growth.

C.V. Raman said, "Science is the most creative form of Art". Since Art has taken a very professional and scientific approach, it needs to be integrated with the science curriculum. Today, Art and Science go hand in hand as far as professional and vocational courses are concerned. In India, educational institutions, especially elementary and secondary schools are on the throes of change and the need is to positively channalise the interplay of energies so that Indian creativity and innovation can

blossom. Both elementary and secondary institutions need to address this challenge, if possible, synergistically in the days to come.

2. Arts in School Curriculum

Art education is a neglected area in the school curriculum. Whatever little art education is imparted, the emphasis is on the learning of skills, whereas its goal should be to develop the aesthetic attitude which permeates all activities and not only the learning of the skills of arts. The attitudes to the arts in the educational system is full of prejudice, the arts are supposed to be intended for the drop-outs or the slow learners only. Such an attitude needs to be changed. Anything which becomes a vehicle for expression of self and of creativity should be for all students rather than for the handful who may be extraordinary in either painting or singing.

The importance of arts education for the overall development of students has been articulated in various policy documents. The report of the Education Commission (1952-53) emphasized the 'release of creative energy among the students so that they may be able to appreciate cultural heritage, cultivate rich interests, which they can pursue in their leisure and later in life'. The Education Commission (1964-66) points out, 'Adequate facilities for the training of teachers in music and visual arts do not exist. The neglect of the arts in education impoverishes the educational process and leads to a decline of aesthetic tastes and values'. National Curriculum Frameworks of 1975, 1988, 2000 and 2005 brought out the importance of art education by defining its aims and objectives in the school curriculum.

The importance of art education has been well recognized, but the position on the ground is altogether different. It has been given a backseat by the teachers, parents and schools. The present situation is not very encouraging. It has gone down further over the last few years. A study conducted by the NCERT has revealed that all children enjoy creativity in their earlier stage of education but by the time they reach class VI, they start losing interest in art activities. Too much stress on the core subjects is the major reason as to why art education has been neglected. Another reason is the formal assessment procedures – adopted in tests and examinations. It is not taken seriously because art related assessment in not reflected in the marks secured by the students. The lack of trained art teachers is also a major problem. The NCF (2005) also observed that there is virtually no opposition to the idea of making arts an important component of learning more as an extra curricular activity but there is considerable suspicion and opposition to the idea of making it a subject that every student must study much in the manner that a child studies Mathematics, Science or other subjects. There are people who feel that the 'fun' of learning will be lost if music, dance and arts are to be taught as a part of the school curriculum. Others are of the opinion that arts are important for the personality development of a child but must not be taught in school and should be pursued by the students outside school system.

3. Objectives of Art Education in Schools

The period from infancy to adolescence is one of rapid growth and change. The curriculum must have holistic approach to learning and development both physical and mental. Children can achieve high level of excellence in sports, yoga and creative art such as Visual Arts and Performing Arts. Artistic works provide opportunities for holistic learning that is rich in tacit and aesthetic activity. Interest in beauty and ability to discern it and integrate it into one's personality, together with other components of artistic experience, should be woven into the entire texture of educational activity.

The objective of art education should be to sensitize the learners so that they may learn to respond to the beauty of the art elements like line, colour, form, movement. Art education should be taken as an essential part of curricular activity for all-round development of the child. Art activities can promote creativity in young children. Teachers can provide ideas, environment, materials and opportunities to help children explore, experiment and follow their own artistic ideas. Teaching of art may be perceived as a tool for development of aesthetic sensibility among learners. The programme of art education should expose the learner to folk arts, indigenous arts and other cultural components leading to awareness and appreciation of the national heritage.

In general education, art education has been advocated as one of the major co-curricular areas recommended for the personality development of the pupil at different stages.

The NCF (1988) had also recommended, "At the primary stage the main objective of art education is to make the child aware of the good and beautiful in her/his feelings through simple performing arts like music, dance and drama". The NCF (2005) has recommended, "art as a subject at all stages should cover all four major spheres that is visual arts, music, dance and theatre. The emphasis should be on interactive approaches, not instruction, because the goal of art education is to promote aesthetic and personal awareness and the ability to express oneself in different forms. The importance of Indian heritage crafts, both in terms of their economic and aesthetics values, should be recognized as being relevant to school education." However, art education and creative expression have not got adequate importance in the actual transanction curriculum of school education. As a result, there is no opportunity for the child to respond or react in creative ways or to find an emotional outlet through art activities.

Objectives

A properly planned curriculum in art education should focus on:

A – Primary Level

- development of appreciation and understanding leading to joy and enjoyment.
- promotion of self-expression, creativity, sense of freedom,

through singing, dancing. supporting children playing with clay, sand, flower, etc. to feel the natural materials and sensitivity towards environment.

- making learning experience more joyful rather than experience the burden of heavy curriculum.
- developing children's senses through observation, exploration and expression.

The aim of art education at this stage should be to provide the child an integrated learning experience of various forms of art: drawing, painting, print making, college, modeling, music, dance and drama. More emphasis should be given on sharpening the sensibility of seeing, hearing, touching and moving.

B – Upper Primary Level

- moulding learners to appreciate and distinguish different art forms.
- moulding learners towards sensibility and aesthetics appreciation.
- co-relating the experience of art with usual life and other subjects.
- moulding learners creative ability and making aware of the rich cultural heritage of India.

At this stage more stress should be given on learner's own imagination and development of his/her own concepts and expression through exploration. Learners should be able to develop a sense of organization and design and to feel a deep and lasting joy of art.

C – Secondary Level

- introduction of new media and techniques and their use for creative expression.
- providing opportunities for developing awareness about folk arts, local arts, other cultural forms leading to an appreciation of national heritage and cultural diversity.
- acquaintance with life and work of local artists.
- enabling students to use their artistic and aesthetic sensibility in day-to-day life.

Normally learners at this stage also need to develop aesthetic sensibilities and social values through projects on conservation of natural and cultural heritage by providing opportunities for study of Indian culture, working with artists in the community, organizing festivals, display of physical environment and surrounding landscape, etc.

D – Higher Secondary Level

- development of proficiency in the language of art.

- preparation for pursuing vocational/professional art courses.
- Identification of artists from their work, region, country and the world through art history.
- experimenting different media to develop own modes of expression.
- selection of discipline for specialization.

4. Salient Features of Art Education

4.1 Proportion in the Context of Relationships of Objects

- What is important or very near the experience of the child becomes large in size. Example: eyes (seeing: various sights), hands (feeling: tactile), feet (exploring: actually moving about) become larger or smaller in relation to the other objects according to their importance. A flower becomes larger than the house because it is an object that can actually be grasped and is not overpowering the child. The ears, hair and mouth are not immediately important so are often omitted.
- Known reality can become more important than seen reality. Four wheels of a cart/car are drawn but only two are seen actually. Both viewpoints are equally valid.

4.2 Methods Used

- Change of size and shape (horizontal/vertical) of paper changes the whole way of seeing things.
- Use of ruler discouraged. Aim is not to precise architectural drawing but an expression of the impression or the gist of the object drawn. Steadiness of hand, sharper observation and non-reliance on mechanical instruments.
- Discourage filling in line drawing. Nature of element is very different, one is thin and precise, the other is thick, more fluid and flowing expressing mass and form rather than outline. Line is used as a language, a specific element of picture making.
- Working together forms a very important part of class work, for sharing and planning ideas, and for arriving at mutual agreement or disagreement. The whole group has to be responsible for the work. The group can be horizontal or vertical. It is necessary to share and respect others' view for confidence building.

4.3 Materials and Mediums

- Students themselves are involved in selecting the medium. This demands active participation and choice.
- Having a choice in selecting the medium is good, so the child is happy about the outcome.
- Mixing of mediums can make their work more attractive as it helps them have an understanding of each medium and figure

out similarities and differences between them as well as discovering a new way of expression.

- Use of old colour magazines, newspapers, old calendars gives a choice of unlimited colours and shades. Also it does not involve expense or scissors and it gives a deeper sense of form.

Art activity in a school should involve no gains or stress in terms of marks. There should be no competition – the whole concept of judging one work best out of many works can only be a subjective exercise, it does no good and, in fact, it only harms. This will build up a feeling of dignity of each one's ability and understanding of differences in abilities – a feeling that each one has something to contribute – this will foster confidence, an attitude of sharing, cooperation, exchange and, therefore, free self-expression.

5. Pre-Service and In-Service Education of Art Teachers

In most of the schools due to lack of specific subject teachers, interest of the children does not grow. The task of pre-service and in-service training of art teachers has to be handled in more than one sector of creative education, that is, visual art, dance, music and theater. There are not many training institutes which impart training to art teachers. They generally rely on the subject matter competencies of the trainees which they possessed prior to their entry into the professional course. These training institutes as such are not even equipped adequately to make up the deficiency in the pre-semi training so far as the content knowledge and skill of the trainee teachers is concerned. The lack of real integration of the method of teaching with the content of the teaching subject has still remained a major weakness in the pre-service training. The curriculum research, development and evaluation component and its linkage with pedagogy and learning theories in the training courses is yet to be effectively established. It is, therefore, necessary to encourage innovation in designing the art teachers' education curriculum.

In-service orientation and training of art teachers should be made compulsory. In addition, special training programmes for art education teachers will have to be organized. The national institutions like NCERT, NCTE, CCRT should train the key personnel and resource teachers, who would, in turn, organize special training programmes for teachers. They should also be required to regularly attend workshops, seminars and other discussion groups for further strengthening of their knowledge.

5.1 Pre-Service Art Teachers' Preparation

There is a necessity to achieve the future needs of art teachers' preparation to face new challenges. The NCTE recognized institutions may impart training to prospective art teachers at B. Ed. and M. Ed. level and/or collaborate with or direct the institutions of art, dance, music etc. to introduce a pedagogical course after their graduation in arts school/ college/university level.

The state departments of education and the Universities will also have to take immediate action to revise the curricula for arts teachers' colleges/departments. The NCTE will have to take up the issue of undertaking intensive art teacher education programmes with individual states and Universities and assist them in restructuring their programmes. This is necessary as it has been observed at large that artists teachers in the schools only teach students to copy their style instead of encouraging them to be creative and develop their own way of expression. They will also have to orient art teacher educators for discharging their responsibilities more effectively.

A multi-pronged strategy as indicated below will have to be adopted to address the problem of art teacher preparation.

- To increase the component of art education in teacher education at various stages.
- To conduct extensive teacher orientation programmes at post degree level.
- To develop a one-year course for art teachers after completion of their professional degree/diploma in any of the Visual arts or performing arts stream before they become teachers.

5.2 In-Service Education of Art Teachers

Orientation and refresher courses of short and long-term duration may be planned to acquaint the in-service teachers to the new developments and changes in diverse areas like music, dance, theatre and visual arts and also to make them aware of new contents, methods and materials in different curriculum areas and programmes in schools. They may also be acquainted with the various strategies which they could try for implementating the maximum changes at the minimum cost by exploiting the available community resources. Areas in the creative art will require proper planning and also efforts for its execution. Continuous assessment could be the main task for the in-service training of art teachers.

The following strategies could be attempted for the professional development of art teachers:

- Preparation of courses and materials for the in-service teachers of art education at various levels. Teaching material may be in the form of resource material, art teachers' handbooks, displays, audio-visual aids, etc.
- Training the trainers.
- Creating appropriate atmosphere for the implementation of the suggested changes by conducting teachers' interactive meets, seminars, conferences, exhibitions etc. in collaboration with other agencies.
- In-service art teachers may also be encouraged to undergo the

specially designed Art Master's course of one year duration on deputation or on study leave.

6. Models of Art Teacher Preparation Programme

To assign Art teachers a central position in the development of Art curriculum, syllabus and text/workbooks, these should be reviewed and tried out by them before introduction. Art education should be integrated with other subjects such as science and technology, social sciences, mathematics, languages, etc. Now-a-days there are numerous openings in art related fields like Fashion Designing, Textile Industry, Animation and film making, calligraphy, etc.

The new emphasis given in the aims and objectives of school curriculum makes the teachers' role more crucial in their realization. The teachers have to develop a new outlook and equip themselves with necessary knowledge, methods and techniques. A thorough preparation of the teacher has, therefore, to be planned systematically. This has to be done both for the in-service and pre-service art education teachers.

Curriculum, in order to be realistic, relevant and meaningful, should be in tune with the pedagogical goals and principles that have been the outcome of long systematic research about the nature of the learner and the learning process, conditions and the methods.

The Kothari Commission (1964-66) recommended: Arts departments at the University level should be strengthened and research in these fields should be encouraged'. The recommendation also include planning of art education on a much broader basis and training of art education teachers at B. Ed./M.Ed. level or introduce one or two years Certificate/Diploma/ Degree level courses for the training of art teachers.

The recommendations also include planning of art education on a much broader basis and training of art teachers by teachers' training institutes of the University, so that after completion of the course at art schools, the students can be admitted to professional training in art education at these institutes for becoming trained art teachers for upper primary and secondary stages.

The NCTE may also introduce art education departments in teacher training institutes of the university at B.Ed. level or introduce art courses as one or two years Certificate/Diploma/Courses in Arts Teacher Training institutions.

Model 1

The Department of Fine Arts and Art Education, Faculty of Education, Jamia Millia Islamia, New Delhi, offers four years course titled Bachelor of Fine Arts (BFA) (Art Education).

The course content of the programme is given as follows:

FIRST YEAR COURSE

Practical Papers

- Sketching
- Drawing
- Painting
- Geometry and Perspective
- *Optional* (any of the following):
- Metal Craft
- Pottery
- Wood Craft
- Batik

Theory Papers

- English
- Elementary Urdu
- Story of Art (Visual)
- Theory of Art Education

SECOND YEAR COURSE

Practical Papers

- Nature Study (in various medium)
- Life Study
- Architectural Drawing
- Composition
- *Optional* (Applied / Sculpture / Graphic)
- Craft (Metal Craft / Pottery / Wood Craft / Batik)

Theory Papers

- History of Art
- Theory of Art Education

THIRD YEAR COURSE

Practical Papers

- Landscape
- Portrait
- Life study
- Composition
- *Optional* (Applied / Sculpture / Graphic)
- Teaching Practice 20 lessons

Theory papers

- History of Art
- Methods and Materials

FOURTH YEAR COURSE

Practical Papers

- Portrait
- Life study
- Composition
- *Optional* (Applied Art – any one)
- Illustration
- Graphic Design
- Photography
- Silk Screen
- *Optional* (Sculpture – any one)
- Portrait
- Life
- Composition
- *Optional* (Graphic – any one)
- Intaglio
- Planography
- Relief Printing

Theory Papers

- History of Art
- Methods and Materials
- Viva + Dissertation + Camp

It appears from the content of the four-year Art education BFA course that only two units of theory of Art Education are included in the first two years course whereas the entire focus is on the professional curriculum of the course which may not yield expected results for the use of preparing art teachers at the end. Thus, the curriculum of such course may not be very fruitful for the development of child, it is equally important to consider the profile of a teacher, teacher education and the capacity building for teachers in the country because teacher is the key person who has to transform the curriculum and then transact it in the classroom.

Model 2

ART TEACHERS' CERTIFICATE COURSE FOR IN-SERVICE TEACHERS (Vacation Course)

1. Course may be conducted during vacation.
2. Admission for in-service teachers only.
3. Course may be conducted by reputed art institutions recognized specially for this purpose by NCTE.
4. The teachers undergoing this course will have to conduct at least 20 practical lessons in art under the supervision of a trained graduate teacher during the period when they will be working in

their respective schools. (Instruction are given in the vacation course)

5. The teachers must attend the requisite number of vacations and complete the prescribed number of practical lessons for the eligibility to appear for the examination at the end of the course.

COURSE CONTENT

***Vacation – I* (2 weeks)**

Drawing and Painting

- Head study
- Time drawing and gesture drawing
- Still life
- Memory drawing

Design

- Functional Design
- Composition

Theory of Art Education

- Education and psychology, sensation and perception, aims of objects of art education at all levels.
- Lessons planning and teaching methods.

History of Art and Art Appreciation

Indus Valley, Pre-Historic and Ancient Western Art.

(Minimum 3 exercises as homework of practicals, theory of education, Art History and Teaching Practice).

Vacation- II (4 weeks)

- Drawing and Painting (same as vacation – 1).
- Design (same as vacation – 1).

Theory of Art Education

- Instincts and emotions, sublimation, sentiments.
- Curriculum in art.
- Lesson planning and teaching methods.

History of Art and Art Appreciation

- Indian Art, Early Indian Art, Greek and Roman Art.
- Fundamentals of Art and Art Appreciation – I.

(Minimum 5 exercises as homework of practicals, Theory of Art Education, Art History and Teaching Practice).

Vacation – III (2 weeks)

- Drawing and Painting (same as vacation – I).
- Design (same as vacation – I).

Theory of Art Education

- Stages of mental development.
- Child Art.
- Methods of Art Education.
- Lesson planning and teaching methods.

History of Art and Art Appreciation

- Kushan, Gandhar and Gupta Art.
- Early Medieval Art in West.
- Fundamentals of Art Appreciation – II.

(Minimum 3 exercises as homework of practicals, Theory of Education, Art History and Teaching Practice).

Vacation – IV (4 weeks)

Drawing and Painting (Same as vacation – Advanced).

Theory of Art Education

- Heredity and environment
- Attention and interest
- Memory and Imagination
- Lesson planning and methods

History of Art and Art Appreciation

- Art from Medieval India and West.
- Fundamentals of Art Appreciation (contd.)

(Minimum 5 exercises as homework of practicals, theory of art education, Art History and Practice Teaching)

Vacation – V (2 weeks)

- Drawing and painting (same as vacation – I Advanced)
- Design (same as vacation – I Advanced)

Theory of Art Education

- Reasoning and judgment and concept
- Character and personality
- Organization of Art Education
- Lesson planning and methods

History of Art and Art Appreciation

- Miniature painting upto 19th century, Renaissance in Europe
- Fundamentals of Art and Appreciation.(Contd.)

(Exercises same as vacation – II)

Vacation – VI (4 weeks)

- Drawing and Painting (same as vacation-I – Advanced)
- Design (same as vacation-I – Advanced)

Theory of Art Education

- Creativity and Guidance
- Administration of Art Education
- History of Art Education
- Lesson planning and teaching methods

History of Art and Art Appreciation

- Art in British India, 17th-19th century: Western and Modern India
- Art Criticism and Appreciation.

(Exercises same as vacation IV)

Vacation – VII (2 weeks) *may be extended as revision*

Model 3

ART TEACHERS' CERTIFICATE COURSE (A.T.C)

Duration – one year

Admission – After successful completion of the foundation course or first year of any professional degree course in Fine Arts from a recognized art institution.

Objectives

- To enable the Art Teacher to provide leadership in programme development in Art for Primary and Upper primary schools.
- To make the teacher sufficiently groomed in both theory and practice of his/her subject and acquire the knowledge and skills necessary for teaching the subject in an integrated manner.
- To enable the teacher to contrive and use variety of effective teaching and learning process.
- To make the teacher competent to experiment with approved and new methods of presenting art experience to children.
- To enable the teacher to recognize individual needs of the children and creating teaching and learning situations based on individual needs.
- To develop the skills to identify and foster creative talent in children.

COURSE CONTENT

Practical course

- Drawing (from life, nature, man-made objects)
- Memory Drawing
- Perspective Drawing
- Painting (Head and life study)
- Painting (Still life)
- Design (2 Dimensional and 3 Dimensional)
- Printmaking
- Craft work

Theory Course

- History of Art
- Theory of Art Education

Teaching

- Practice lessons

This course would lay equal emphasis on theory and practicals including theory of education in general and art education in particular. The course content shall include Educational Psychology, Principles of Education, General and Special Methods, Educational Administration and Practice Teaching.

Model 4

PG DIPLOMA IN ART EDUCATION (PGDAE)

Duration – One Year

Admission – After successful completion of Professional degree/diploma of Fine/Visual Arts in any of the following stream.

- Drawing and Painting
- Sculpture or Modelling
- Applied Art
- Textile Design
- Pottery and Ceramics
- Furniture and Interior Design
- Craft

Objectives

- To make the student thoroughly groomed in theory and practice of the subject and in other necessary streams of Art.
- To equip the students with the knowledge and skills necessary for teaching the subjects in an integrated manner in the Secondary and Higher Secondary Schools.
- To make the student conversant with modern methods of

teaching art even in the elementary, secondary and higher art institutes.

- To provide teaching experience under expert guidance through internship in collegiate institutions including higher art institutions.

COURSE CONTENT

Theory

- Psychological Foundations of Education.
- Philosophical and Sociological Foundations of Education.
- Methods of instruction and evaluation procedure.
- Special methods of teaching art

Practice Lessons

- Minimum 10 lessons in Secondary or Higher Secondary Schools.
- Internship for 12 days in higher art institutions (4 weeks – 3 consecutive day in one week)

Practicals

- Composition
  - In painting/relief sculpture/print making: organization of figures and forms in a given space, expression of specific moods and emotions.
- Still life
  - Rendering the group of objects in different medium, i.e., pencil, charcoal, ink, colour, etc.
- Design
  - The candidate will have to select the discipline in which he/she has secured his/her degree or diploma.

Project work

- Every student will be required to select any one subject from the curriculum of either higher secondary standards or specialized courses in the various branches of Art, at the higher education level.
- Prepare a teaching programme with reference to the existing conditions, objectives, improved methods, etc.
- Suggestions for improvement of teaching etc.
- Well written and illustrated dissertation will have to be submitted by the students at the end.

Theory

A. Psychological Foundations of Education

Objectives:

- To acquaint the teacher trainees with the nature and scope of

educational psychology, contributions of Biology and Sociology to psychology.

- To acquaint the teacher trainees with natural endowment of human maturation, growth and development.
- To acquaint the teacher with child's mental processes culminating in his behaviour.
- To acquaint the teacher with knowledge of psychological facts on which effective teaching can be based and dealt with actual classroom situation.
- To acquaint the teachers with first three stages of development with special emphasis on the needs and requirements of adolescence, and abnormalities of behaviour, their causes and how knowledge is built up in the mind.
- To acquaint with the relationship between individual and group.
- To help them understand and use the methods and tools of assessing the abilities of pupils.

B. *Philosophical and Sociological Foundations of Education and School Organisation*

Objectives

- To understand the interrelation of philosophy and education.
- To understand how different sciences such as Biology, Psychology and Sociology determine the scope of the educational process.
- To understand and appreciate the social and moral forces which impinge upon education.
- To understand the place which education occupies in the development of a society
- To understand and appreciate the ideals and values.
- To develop democratic attitudes which enable the teacher to work as a leader in different social groups, e.g., classroom, school and community.

C. *Methods of Instruction and Evaluation Process/Procedure*

Objectives

- To acquaint the teacher trainees with methods of organization of curriculum and planning of teaching work.
- To help them understand the need of framing instructional objectives.
- To develop skills necessary for: 1) formulating the instructional objectives, (2) Define specific behavioural changes.
- To familiarize with principles underlying modern educational developments, different types of lessons and to develop skill in planning.

- To develop skills in the preparation and use of appropriate teaching aids and methods of Instruction.

D. Special Methods of Teaching Arts and Crafts

Objectives

- To help the teacher trainees to have clear idea of the nature and scope of the subject.
- To create consciousness of the importance of arts and crafts in life and education.
- To inculcate proper attitudes essential for teaching art subjects.
- To equip with the knowledge of method and skills necessary to teach subject in an integrated manner to the pupils of Secondary, Higher Secondary Schools and Higher Art Institution.
- To develop competence in the modern methods of teaching art at all levels.
- To provide teaching experience through practice and internship.
- To enable teacher trainees to evaluate scientifically the teaching and skills in art.

7. Development of Source/Resource Materials for Teachers

While formulating curriculum the need for material development to support teaching-learning is required to be emphasized and textbooks need to be contextualized. Curriculum should be based on the community needs and specific teaching-learning process within the classroom and on type of materials to be used in the classroom. Art education will have to be brought into curriculum instead of treating it as an extra or co-curricular activity. Art education should be a compulsory subject upto class X in the school curriculum and integrated into overall education at pre-primary and primary and secondary stages and as an optional paper at higher secondary stage. The content of the subject should be taught stage-wise in each area of art.

Source/resource materials for art teachers including teachers' manual, handbooks, reference materials, teachers' resource book etc. should be designed in specific areas of art, such as workbooks relating to Art, Aesthetics, Art History, Art education, Psychology, Pedagogy. etc. Mass media and educational technology, including Films, TV, Video and Computers should be utilized for creating awareness of art education and its relevance to culture, creativity and even for society and environmental concern of national development. It should be used as a tool for evolving participative and interactive modes of teaching and learning for continuing education for teachers.

Training in the use of libraries and audio/video programmes have to be an important component of the instructional process. Educational technology needs to be employed in the spread of useful information to

improve quality of education, to sharpen the awareness of art and culture and to train the teachers.

8. Evaluation in Arts

Evaluation procedure should be followed in a methodological manner and for this evaluation criteria is required to be stated clearly. The NCF (2005) draws attention to the arts and heritage crafts as an area of school curriculum. It inspires new forms of knowledge and creativity and recommends craft mapping to identify zones where vocational training in craft forms involving local craft persons can be made available to children.

Assessment of children's learning is very crucial to ensure that each child is proceeding according to his/her own pace and yet finding a challenge in the learning situation. While continuous assessment will be very necessary, there will also be need to provide for some end of a module assessment at the end of each graded module which will help the teacher to decide if the child is ready to move on. A more creative assessment process would be needed. Keeping in view the fact that child can be intelligent in many different ways, children should be prepared to use their skills beyond the four walls of the classroom.

The main purpose of evaluation is to see how far the objectives set forth to be achieved through curriculum have been realized. Evaluation is naturally related to the learning processes and methods of teaching that have been used in process of instruction and learning. The following characteristics of useful and meaningful evaluation should be noted:

- It should give reliable and concrete evidence of the attainment of specific objectives.
- It should gradually cover a number of objectives and the entire course of studies.
- Evaluation should be done with a variety of tools and techniques to measure different objectives and content.
- Evaluation should be done by teacher himself.
- There should be flexibility in evaluation and, therefore, no rigid system of evaluation be imposed.
- The emphasis should not be on formal tests, it should rather be on the assessment of pupil growth for the guidance of all concerned.
- Evaluation has to be process oriented, criteria based and non-competitive.
- Evaluation should be continuous, comprehensive and annual or external examination need not be given over-emphasis.

9. Implementation of Art Education in Schools

1. A small research unit may be set up in the organization responsible for the development of curriculum and syllabi. The function of this unit should be to make available research reports

concerning curriculum policies, curriculum designing and surveys.

2. At each level representatives of functional groups of the society such as parents, teachers, teacher educators, expert bodies, employers, government departments at appropriate levels, state level resource and training institutions, state board of school education and all other stakeholders should share and negotiate their respective vision of educational aims and processes through participation and dialogues.
3. The schools should be equipped with basic infrastructure for art education which normally are basic material, provision of spacious rooms for visual art and performing art learning.
4. The managerial competence plays a very crucial role in the education of children. While teachers deal with students directly, the Principal supervises the work of the teachers and maintains links with, parents, government and many others connected to school. It is strongly felt that for an effective implementation of art education in schools, the subject needs to be evaluated methodically and included in the performance report of the learners. Another concern is why art education has not been given due importance despite being mentioned in all the policy documents on education since last five decades as an important curricular area of education as there is more emphasis on core subjects and all co-curricular areas are neglected. Besides, teacher training for art education at different stages is inadequate.
5. The schools should organize seminars, workshops and exhibitions from time to time.
6. Outdoors activities and art practices should be encouraged to provide children opportunity to work with the community. At various stages workshops should be organized to interact with local artists and craftsmen. The focus of such interactions should be given on utilization of local resources like local arts and craft traditions.
7. Knowledge sharing is an important factor which encourages children to share their experiences with fellow students. Teachers also should share their classroom experience with other school teachers.

    - In-service and pre-service preparation programmes should be developed, offered and evaluated systematically.
    - Teacher Training Institutes need to be strengthened and upgraded.

8. The management should be sensitive to the needs of the students and also understand the problems of the teachers. The management should constantly monitor the performance

of the teachers and the students. The management should be dynamic and innovative in effecting improvements and excellence should be the only aim.

In the end, one should always keep in mind that today's child is the builder of future India and it is only through a well-designed and effectively implemented educational programme that the child could be equipped to realize his/her inner potential of creativity and to contribute meaningfully to nation building.

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Chapter 10

Professional Preparation of Physical Education Teachers

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1. Overview

The origin of teacher education in physical education in India goes back to the 1900's with the advent of a certification programme at the YMCA College in Madras. The programme was a modified version of the curriculum developed at Springfield College, Massachusetts in the late 1800's. Its primary mission was the preparation of individuals to teach physical education in the schools. Early programmes in physical education teacher education (PETE) lasted from a few weeks to several months. Other programmes and colleges were established across the country but the development of state or federally funded full-fledged, recognized, degree programmes did not occur till the latter half of the twentieth century.

As in many other countries, military preparedness played a role in arousing interest in fitness and physical education. Although recruitment of troops was an old established practice in the Indian subcontinent, even predating the British colonial era, the poor fitness test performance of many Indian men during World War II led to the establishment of the National Cadet Corps (NCC). After Independence, the Union Ministry of Education focussed on the development of a national fitness programme and the establishment of national institutes to prepare physical education teachers and sports coaches. The debacle in the Indo-China war in 1962 led to institution of compulsory physical education and NCC programmes in many schools and colleges across the country. In addition to the government run and supported educational schools and colleges, there were many public schools that had longstanding traditions of compulsory sports and physical training based on the British public school model.

By the end of the twentieth century, a plethora of PETE institutions sprang up all over India. While most of these institutions existed at the

state level or under private management, two different models of PETE developed. The first followed the original YMCA model of awarding teaching certifications. Some of these programmes developed into a second model involving three-year degree programmes on the lines of standard degree programmes in the traditional subject areas. These degree programmes have in many cases expanded into post-graduate programmes, some even leading to doctoral degrees.

Flagship institutions such as the Lakshmibai National Institute of Physical Education and the Netaji Subhash National Institute of Sports were initially under the Ministry of Education which formed a Society for National Institutes of Physical Education and Sports (SNIPES) to oversee the functioning of these two federally supported institutions. The body was subsequently absorbed into the Sports Authority of India (SAI) under the auspices of the Ministry of Education and Culture in 1984. The centralized, neo-socialist model of organization of these institutions has had a profound influence in the establishment and eventual development or lack thereof in the PETE curricula in the country. Following the sixties when a handful of PE professionals were sent abroad to study, the seventies saw a larger volume of PE professionals and coaches going to east European and Socialist countries (mainly the erstwhile German Democratic Republic and the USSR) under government sponsored programmes. The last few decades of the twentieth century saw a significant decline in the number of foreign educated and trained professionals in PETE and areas such as coaching. The impact of this insularity on PETE in India may be partly responsible for the stagnation that prevails today.

It is important to highlight the parallel progress of a few selected popular sports in India. The success of Indian teams in sports such as cricket and tennis has occurred primarily due to private enterprise, funding and savvy corporate style planning. The successes of Indian athletes at the 2008 Olympic games in Beijing has again directed the focus towards winning medals at international levels as a means of injecting national pride and attaining international prestige. While these athletes have been showered with laurels, cash bonuses and other honours bestowed by the nation's highest officials and politicians, the rhetoric of the policy makers has failed to mention PETE even in a cursory way. While all the achievements of elite Indian athletes in recent years are certainly laudatory, the lack of physical fitness amongst the masses and the epidemic of cardiovascular disease and obesity will have a profound impact on Indian society for decades to come. The emergence of cardiovascular disease as the leading cause of mortality amongst Indians today has been exacerbated by the increasing levels of sedentariness, obesity and the high prevalence of diabetes. Worldwide epidemiologic evidence is unequivocal about the lack of physical activity as a major risk factor for coronary heart disease and many other conditions. Certainly, physical educators and educational institutions have a crucial role to play in instilling

lifelong habits of physical activity that must extend beyond the traditional sports and games model that pervades the physical education curriculum in most schools and colleges. For, it is only from a healthy population base that increasing numbers of elite athletes will emerge, this exaggerated focus on the sports and games model needs to be reviewed in light of teacher preparation models and curricula that will best serve the masses in the 21st century.

2. National Sports Policy (2001)

Activities relating to Sports and Physical Education are essential components of human resource development, helping to promote good health, comradeship and a spirit of friendly competition, which, in turn, has a positive impact on the overall development of personality of the youth. Excellence in sports enhances the sense of achievement, national pride and patriotism. Sports also provide beneficial recreation, improve productivity and foster social harmony and discipline.

These are all noble aims but the glaring absence of any serious emphasis on fitness and wellness as the overarching theme is perhaps noteworthy. The policy document blurs the distinctions between physical education and competitive sports. This is evident right from the title of this policy which uses the term "Sports" and not "Physical Education and Sports". Further sections on "Broadbasing of Sports" cite factors such as "inculcating national pride in the younger generation" and "universalisation and mass participation in Sports" lead to "Integration with Education" which refers to the implementation of "Sports and Physical Education" as a "compulsory subject of learning up to the Secondary Level". Other than alluding to a "National Fitness Programme" that is to be implemented throughout the country, this document does not really expound on which aspects of fitness (e.g. health-related fitness versus athletic or sport-related fitness) are being referred to. Ironically, a national physical fitness programme was started in 1959-60 to "...raise consciousness among the youth of the country towards physical fitness" (Robson, 1982, p.6). This programme was renamed the National Physical Fitness Programme in 1979 with "30 lakh competitors participating... every year". (Robson, 1982, p.6). Unfortunately, the programme does not exist any longer. The content of physical education is unclear from these policy documents. Making physical education a compulsory subject is commendable. But in the absence of radical changes in resource allocation, revision of teacher education programmes and job responsibilities, it still leaves the emperor without any clothes!

There is nothing inherently wrong with the intense emphasis on competitive sports in the interest of boosting the national psyche and encouraging youth toward achieving superlative performances in the sports arena. The National Sports Policy documents do not really convey an impression that sound pedagogical, health fitness values were considered as guiding principles. While making provision for ambitious notions such

as "Scientific Back-up to Sports Persons", "Sports Equipment", "Training and Development of Coaches, Sports Scientists, Judges, Referees, and Umpires" etc., nowhere in this document is teacher education in physical education even mentioned. In the final analysis, this is indeed a "Competitive Sports Policy" with a passing reference to physical education in a few sections.

In a rapidly developing country with an ambitious agenda for development and progress to secure India's deserved role and place in the international arena, this policy is praiseworthy. However, this fixation on elite level sport must come at an enormous cost *vis-á-vis* the masses. This narrow, one-dimensional approach seems to be the primary focus in every update of the National Sports Policy, and it needs to be re-examined. However, despite India's long standing involvement with organizations such as the UNESCO, it is only in the more recent revision (Draft 2007), the National Sports Policy embraced the worldwide declarations on the universal right for physical education and sports. Again, this policy is geared toward competitive sports and although it cites the UN Charter, it does not really touch upon the concept of "universal physical education". Regrettably, the demographic data cited does not even provide any evidence from within India itself and refers to information from China, Hong Kong, etc. The document does admit to the shortcomings of implementing the policies of earlier plans. Further, the admission that vast numbers of youth without access to means of pursuing daily life physical activities in the form of PE, sports and games is an important point that by itself justifies the need for nationwide quality PE programmes.

Physical education and sports take a back seat to the traditional academic subjects. This situation is by no means unique to India or one that can be rectified with a short-term solution. However, consider the impact of low fitness and high cardiovascular risk in the vast numbers of highly trained Indian professionals who rank amongst the world's best. If these individuals are dying prematurely or being disabled by preventable conditions, then the vast socio-economic repercussions and impact on the country's resources should certainly be of great concern. Can India afford to enhance national prestige and all those noble qualities cited in the National Sports Policy at the cost of ignoring the basic physical activity and fitness needs of the average citizen? Perhaps what is needed is a separate policy that addresses the general physical activity and fitness needs of the nation so that the Sports Policy can advance on its own with its own unique agenda.

The overview of the current scenario presented above sets the groundwork for the continued evolution of PETE programmes by juxtaposing this information against the milieu of social, political, economic and cultural changes that have been at the root of sports and physical education policy formulation and change in India leading up to the 21st century. One of the problems that dogged the development of physical education policy is the near absence of a body of published literature on

research in PETE and physical education curriculum in India. The sparse literature that does exist almost completely ignores the research database on PETE, curricular approaches, teacher behaviours, research in teaching effectiveness and job analysis. While it is a fact that there are inherent educational, socio-cultural differences in the Indian system, and the study of teacher expertise is relatively new, ignoring global trends and the developing knowledge base can only be detrimental to the development of updated PETE models to meet the needs of 21st century India.

Therefore, the purpose and focus of the present paper is to discuss the pedagogical foundations of teacher education in physical education. Philosophical, sociological and psychological issues relevant to physical education are presented along with summaries of teacher education research and guidelines from the National Association of Sport and Physical Education in the United States. The stages of motor learning and models of teacher education are summarized. It is not possible within the limits of this paper to expound on and propose remedies for all the ills that may be plaguing physical education and sports in India. If this paper provokes, or stimulates an intense discourse, resulting in systematic reviews of the status of this field in India, then it will have served its intended purpose.

3. Programme Development

Melograno (1981) has observed that the curriculum is often designed intuitively, "based on ambiguous aims and purposes". He recommends that for systematic curriculum planning and ongoing improvement, it is necessary to have "some conception of educational goals". These goals are arrived at through a consensual process of educational planners and those with a vested interest in the educational process. A *laissez faire* approach sometimes results due to fads, trends and pressures from various interest groups. Goals and philosophies sometimes conflict with each other. For example, the notion of universal physical education is perhaps driven by the philosophical concept of Essentialism which emphasizes teaching of the essentials. The challenges of implementing such an approach in a society within the complex milieu of prevalent socio-economic-political forces are readily apparent.

3.1 Development of Standards: Rather than reinvent the wheel, it is useful to present standards and guidelines that have already been developed by experts. The National Association of Sport and Physical Education (NASPE) – USA has developed a detailed list of standards and content information in respect of physical education students, as summarized and presented in Table 1.

Table 1: NASPE – (USA) (2001)
Standards for Physical Education

STANDARD 1: Content Knowledge

Accomplished physical education candidates have a command of the subject matter of physical education that reflects both breadth and depth. They establish and promote lifetime physical activity habits of all students. As well, they can articulate the relevance of the underlying sub-disciplines of physical education, integrating appropriate concepts into the physical education program that encourages lifetime physical activity.

STANDARD 2: Curricular Knowledge

Accomplished physical education candidates consistently articulate a value system base for selecting, planning and evaluating their curriculum to meet student needs and promote student learning.

STANDARD 3: Equity/Fairness/Diversity

Accomplished physical education candidates model and promote behavior appropriate in a diverse society by showing respect for and valuing all members of their communities and by having high expectations that their students will treat one another fairly and with dignity.

STANDARD 4: Sound Teaching Practices

Accomplished physical education candidates thoroughly comprehend the fundamental goals of physical education (refer to NASPE, 1995). They carefully orchestrate the blending of relevant principles of pedagogical practice with the complex nature of the physical education content. This gives their teaching actions purpose and allows them to implement a flexible yet effective instructional program responsive to students' interests, needs and developmental levels.

STANDARD 5: Assessment

Accomplished physical education candidates consistently use a variety of authentic assessments aligned with national, state standards, state and local program goals, and student outcomes goals to provide feedback to students, report student progress, shape instruction and evaluate curriculum and program goals.

STANDARD 6: High Expectations for a Physically Active Lifestyle

Accomplished physical education candidates maintain a stimulating, productive learning environment that holds all students to the highest expectations for adopting a physically active lifestyle.

STANDARD 7: Methods of Inquiry

Accomplished physical education candidates know, understand, interpret, critique and consistently use research to improve practice.

STANDARD 8: Collaboration, Reflection, Leadership and Professionalism

Accomplished physical education candidates are lifelong learners who collaborate as members of a larger learning community to improve school physical education for all students and enhance the professional culture of their field.

STANDARD 9: Mentoring

Accomplished physical education candidates contribute to the professional development and support of other current and/or future educators.

Source: National Association for Sport and Physical Education Standards for Advanced Programs In Physical Education Teacher Education. 2001.

4. Philosophical and Pedagogical Bases of Teaching in Physical Education

Goals are broad outcomes whereas objectives refer to specific outcomes. Therefore, educational goals and objectives are both involved in curriculum development and instruction. Following Bloom's (1956) taxonomic approach, we can characterize these goals and objectives under psychomotor, cognitive or affective domains. Figure 1 illustrates how the different domains serve to attain the standards laid down by NASPE.

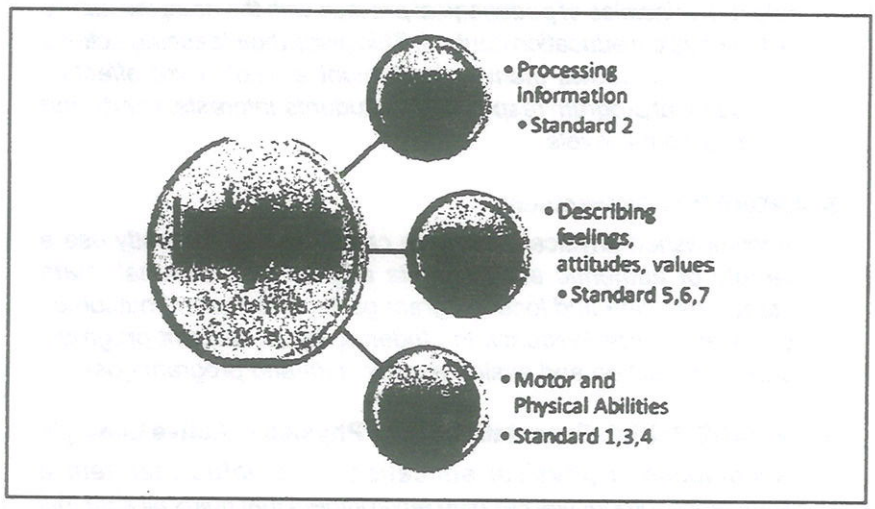

Figure 1: Learning Domains (modified from Rink, J.)

How do individuals learn a Motor Skill? While physical education teachers are involved in the affective and cognitive development of students, motor learning is perhaps one of the unique aspects of teaching in physical education. According to Fitts and Posner (1967) there are three stages that an individual undergoes in order to perform a movement skillfully. The **cognitive stage** involves thought processes, concentration and coping with the new skill. This is followed by the **associative stage** where the individual can concentrate on the patterning and refinement of the skill. Finally in the **automatic stage** the learner does not have to consciously focus on the skill and can perform consistently. Now the learner is ready to deal with other aspects of the skill in the context of strategy, placement, defensive manoeuvres, etc.

4.1 Directions in Physical Education and Sport

Darst (1978) has suggested that the lack of effectiveness of physical education programs is due to the fact that they seek to attain too many goals together. Instead of physical fitness, motor abilities, mental-social-emotional adjustment, he recommends incorporating the concept of lifetime fitness via physical activity.

Freeman (1987) lists the following trends – (a) lifetime-sports approach; (b) new games approach; (c) mainstreaming. The quest for better and more effective programs is an ongoing one. Therefore, curriculum planning in physical education cannot remain dormant for long periods of time.

Several curriculum models have been developed for physical education such as developmental physical education, adventure education, physical activity, fitness and wellness education, integrative physical education, sports education. Each model is adaptable to the context within which it is to be used (Siedentop &Tannehill, 2000).

Siedentop (1994) has proposed a "Sport Education" model that is integrated within the framework of physical education. This model envisions its primary objective as the development of sport skill and competency so that students can participate in sport for a lifetime. The six elements that distinguish sport education from traditional types of physical education are – *seasons, affiliation, competition, culminating event, record keeping and festivity*. Not only does this approach meet several NASPE standards (refer to Table 1) but this is easily adaptable within the context of physical education in India where the traditional games and sports model is the most widely followed format in school and college curricula.

4.2 Research in Teaching Effectiveness

According to Siedentop et al (2000) this area has a relatively recent history. However, within a short span, the information base has gained an increasing level of sophistication beginning with simpler observational studies in the 1960's to the development of observational instruments in

the 1970's and 1980's. The research base has involved qualitative, intervention, descriptive as well as experimental paradigms. Several international scholars began developing a database. The Academic Learning Time (ALT-PE) system devised and developed by Siedentop and colleagues (2000) was based on classroom observational research. Process-product investigations have corroborated earlier findings from classroom observational research. In this type of design, systematic observations of student teacher behaviours are correlated with learning outcomes. Qualitative research paradigms became prevalent in the 1990's with the work of Locke and Griffin (Siedentop & Tannehill, 2000). These approaches extended into the ecological paradigm where teachers and students were studied to determine how they processed and brought meaning to the physical education experience.

The accumulation of research evidence clearly supports the notion that physical education teachers can develop their teaching skills not only during their practice teaching experiences, but also on the job. Student teachers can improve their skills significantly with effective supervision enhancing the ALT-PE of their students.

4.3 Variables of Affective Teaching

The following factors have been found to be affecting teaching:

- Effective work planning
- Good presentation of new material
- Organization and management of learning experiences and students
- Active involvement in teaching students
- Supportive learning environment
- Repertoire of teaching styles
- Teaching to facilitate student understanding

(Mawer 1995)

- Lesson clarity
- Variety of instruction
- Teacher task orientation
- Engagement in the learning process
- Student success rate

(Borich 1996)

- Identification of intended learning outcomes
- Planning of learning experiences
- Clarity of presentation of tasks
- Organization and management of the learning environment
- Environmental monitoring
- Development of the lesson content based on student responses
- Evaluation of instructional/curricular process effectiveness

(Rink 1993)

5. Structure of Teacher Education Programmes

The present PETE model generally conforms to a four-year programme with a programme of general courses leading to various areas of specialization. Admission requirements are meant to ensure academic rigour but critics will argue that the abysmally lower academic qualifying criteria for physical education institutions in India (e.g. high school graduation marks of 45%) allows entry to students who would find it difficult to qualify for other types of academic programmes. With the burgeoning of institutions offering physical education teacher education programmes in India today, questions such as the effectiveness of these programmes have not been addressed. No federal mandates concerning the measures of effectiveness such as student competencies exist, nor is there any national or state level credentialing or certification system to license physical education teachers as in many other countries. The growth of these institutions has not always been systematic and no authentic, radical curricular renewal has occurred in the last few decades. A recent trend has been the addition of newer "specialties" such as exercise physiology, biomechanics, sport psychology, sports management, journalism, etc. Paradoxically, the faculty often assigned to these areas almost always consists of those who began with physical education teaching degrees with limited academic qualifications or expertise in areas such as management, journalism, etc. Indian physical education institutions do not award degrees in any of these new areas that have seen rapid development elsewhere. From a pragmatic standpoint one is left wondering where these graduates will end up, given the rather limited job market for these interdisciplinary specialties in India. Are graduates of these programmes destined to flounder in futile job searches in non-existent job specialties? Unfortunately, some of these graduates are turned down when they apply to foreign universities as they are deemed to have inadequate academic preparation in these specialty fields.

The current state of affairs begs the following questions :

- What is the core of courses and content knowledge that students actually need?
- Are the admitted candidates adequately qualified as determined by the existing entrance qualifying criteria?
- What percentage of graduates from these programmes end up as teachers of physical education in schools and colleges?
- What is the level of job satisfaction amongst these graduates?
- What makes the best teacher education programmes more effective?
- Are existing degree programmes capable of providing the level of professional development sought by those who seek to advance and successfully progress to post-graduate programmes?

Professionals in these institutions must already be familiar with at least some of these issues based on their experience but published empirical evidence is non-existent. Institutes receive state and federal sanction based on certain criteria but a much larger discourse is needed to develop a national level of standards perhaps leading to certification and licensure for PE teachers. Performance-based standards are needed and not just a prescribed list of courses that student teachers must take in order to obtain a physical education teaching degree. This will require the development of standard competency criteria rather than the existing system which simply lists the courses taken and grades achieved in theory and activity courses but minimal evidence of teaching proficiency. Most importantly, national physical education teaching standards and competencies need to be developed under the aegis of the National Council for Teacher Education (NCTE). Once this conceptual framework is established, the core curriculum can then be revised to achieve these standards.

6. Conclusions

- No comprehensive, updated policy or PE teacher education guidelines could be located in our comprehensive literature search. Teacher accreditation, licensing or relevant certifications for physical education teachers are largely non-existent in India.
- Our investigation has revealed the stark absence of a literature base on physical education teacher education in India. It appears that curriculum development, systematic teaching analysis and the areas covered earlier in this paper are relatively unknown in the physical education profession in India. The evidence of collaboration in these areas between physical education professionals and experts from education and curriculum theory is almost non-existent.
- Despite the increasing number of institutions offering physical education degrees in India, published evidence of these curricula being based on a systematic job analysis or review of market demands is not available. Quite often the post-graduate trained physical education staff person in many universities and colleges is relegated to performing tasks such as supervision of grounds maintenance and paperwork for their sports teams. Surely one does not have to pursue post-graduate degrees to learn how to perform these tasks! The absence of any formalized, coherent PETE directives from any of the leading agencies in the area of teacher education is glaringly apparent. It is unclear whether this is due to a genuine lack of information or a general lack of commitment towards physical education as a profession.
- A systematic, critical job analysis is badly needed to identify the right foundational course as well as market demands to facilitate

a massive revision in student teacher preparation. The emergence of course offerings and specialties in various areas of exercise science (e.g. exercise physiology, biomechanics, sports psychology) and sports studies in many post-graduate programmes is worthy of evaluation. The academic preparation in these specialty areas of exercise science is often outdated and relies on limited coursework in that subject area with limited laboratory resources. Internationally, post-graduate preparation in exercise physiology, biomechanics and sports psychology can range from two years (master's programmes) to five years (doctoral) programmes of study. This cursory approach adopted by some post-graduate physical education institutions needs to be revised drastically in the light of their original mission.

- The void of research in teaching physical education in India is reflective of the training and education of the previous and current generation of mentors. The post-graduate curricular preparation of these professionals rarely trains experts in qualitative or behavioural research designs. As a result, the research being conducted in post-graduate programmes in physical education attempts to follow only experimental or quasi-experimental designs.
- Of all the physical education grant proposal titles submitted to the University Grants Commission (UGC) in 2008, not a single one is directed towards physical education teaching or curricular analysis. Once again, this is reflective of the resources or the lack thereof, as evidenced by the outdated sources often cited in dissertations and theses received for evaluation by external examiners. Although the UGC clearly requires a record of scholarly productivity of faculty in universities and colleges, many physical education directors at the college/university level use the doctoral degree for guaranteeing job security and very rarely continue a research agenda. The few exceptions occur due to individual initiative or, when the rare, fortunate individual acquires a position in an institution where the pursuit of research is possible.
- The isolationism that Indian physical education has endured can be partly resolved through well-planned academic exchange programmes between Indian and reputed institutions across the world. If international coaching experts can be imported to train Indian sports teams, surely international academicians can be contracted to bring latest teaching/learning and analysis techniques in physical education to India. The talented base of highly qualified academicians of Indian origin in the United States, Canada, Europe and elsewhere can prove to be a valuable resource should there be any serious commitment to resolve the current situation.

- Proposals to conduct short-term workshops using the ASC model may prove to be a woefully inadequate remedy for major curricular revision and reducing the high level of obsolescence that exists in physical education professional programmes. When so many physical education experts in India are not privy to current information and research expertise, how can they, in turn, be expected to bring other professionals up to par at these scholarly events? Highly experienced retired physical education experts are also a valuable resource but they do not have to be the primary source of guidance for policy making and programme development.
- Policy decisions at the ministry level and downwards should be driven by precise planning based on a sound pedagogical premise and not for sentimental reasons or in the pursuit of transient glory. Decision makers have often gone on record making speeches that clearly indicate the lack of appreciation of the breadth and scope of physical education and its interrelationship with other academic areas. A team based approach in tandem with academicians and genuine experts with relevant experience is desperately needed to address the needs of the present.

Epilogue

"Alice looked around her in great surprise. Why, I do believe we've been under this tree the whole time! Everything's just as it was!". "Of course, it is!" said the Queen, "What would you have it?". "Well in our country," said Alice, still panting a little, "you'd generally get to somewhere else – if you run very fast for a long time as we've been doing."

"A slow sort of country!" said the Queen. "Now here, you see, it takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run twice as fast as that!"

(Carroll, 1960, p.145)

Running in place in the 21st century? Or is it destined to be liberated by fresh infusions of ideas and concepts from which it has remained isolated? The credibility of physical education as a viable educational and lifelong learning experience for students in the 21st century hangs in the balance.

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Chapter 11

Teacher Education Through Open and Distance Learning

MOHAN MENON

1. Introduction

1.1. Need for More Teachers of Quality

Quality of teacher training and ongoing professional development are crucial to quality of teacher performance in the classroom. Role of teacher is the single most important factor in assuring quality in the teaching-learning process. Hence, without exception all developed and developing countries have been placing considerable emphasis on pre-service and in-service teacher training including Continuous Professional Development (CPD) of teachers. Traditionally, teacher training, both pre-service and in-service, involved face-to-face classes organized in institutions combined with workshop and workplace experiences based on the multi-faceted role played by teachers in the classroom, school and community. With the democratization of school education, achieving universal primary education (UPE) happens to be the first priority for most developing countries followed by expansion in secondary education in those countries where UPE has been successful. This has put lot of pressure on the system needing adequate infrastructure and human resources to take care of more and more children enrolling in primary and secondary education. In many countries especially in Sub-Saharan Africa (SSA) and South Asia (SA), there is an urgent need for expansion in the number of primary and secondary teachers. Many of these developing countries find their schools either not having enough teachers or a large chunk of teachers are untrained. Some also face the problem of 'losing teachers' either due to the pandemic of HIV/AIDS or migration to more developed countries. Existing institutions of teacher education will continue to play an important role but, alone, they will not meet the goals of Education for All (EFA) by 2015. Good and adequate number of teachers are the key to educational expansion and improvement. In all countries especially in

Sub-Saharan Africa and South Asia, there is an equally important need to improve the quality of teaching along with increasing access to schooling. It is evident that to achieve universal access to quality teaching-learning environment in schools, we need adequate teachers who are competent to create and manage these classrooms. This cannot be made possible through only traditional training modes and methodologies; new approaches and modes of teacher education are essential.

1.2. Towards ODL based Teacher Education

Teacher development involves training quality teachers before they are recruited, inducting them into the system, maintaining their quality through recurrent retraining and ongoing professional support. However, this is not always the reality as many developing countries have to recruit fresh unqualified or under-qualified persons as teachers without any initial training. It is evident from the experiences of these countries, especially the large developing countries that demands in teacher training and ongoing development of teachers cannot be met only through conventional face-to-face training model. Governments are aware of this situation and have been formulating teacher training policies and strategies incorporating alternative modes of training. Developments in open and distance learning and technology integrated training made it possible to think of alternative modes of teacher preparation. Many countries are benefiting by the use of Open and Distance Learning (ODL) and Information and Communication Technology (ICT) for teacher training. Thanks to the emergence of the open universities and innovative technologies, there have been major changes in curriculum design and transaction, nature of interactive learning materials and technology mediated learner support for teacher training. In spite of these major developments and innovations, quality of these programmes is still a concern among education professionals, teacher educators and education policy makers.

1.3. Indian Context

In India too, teacher education has always been recognized as one of the most crucial means of social and national development. This view has been endorsed by several commissions and committees appointed after Independence. A professional degree/diploma in education has been considered desirable to the level of being obligatory for all school teachers. Education Commission (1964-1966) emphasized this and recommended that efforts should be made to train all untrained teachers in schools and suggested the use of alternative modes to train the large backlog. As a consequence of this recommendation, the Central Institute of Education (CIE) in the University of Delhi started the Summer School-cum-Correspondence Course followed by the Regional Colleges of Education under the National Council for Educational Research and Training (NCERT).

This was the beginning of the initial form of teacher education by correspondence mode in India. The Policy Resolution on Education (1968) and the National Policy on Education (1986) endorsed the need for addressing professional improvement of teachers on a continuous basis. The Programme of Action of the NPE (1986) highlighted the role of distance education in in-service teacher education programmes. Emergence of open universities in India and specially the contributions made by IGNOU in the area of designing and delivering professional courses by distance mode have been positive developments. However, there are still strong views on the potential and effectiveness of the teacher education programmes offered through open and distance learning. These views are mainly created by shoddy operations of several distance education institutions in India during seventies and eighties and also due to lack of proper understanding of the concept and possibilities in the open and distance learning mode.

2. Open and Distance Learning: The Emerging Concept

2.1 Defining ODL

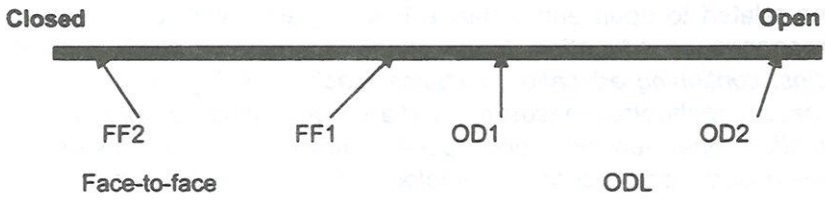
There is no one definition of *open and distance learning*. Literature in this area reveals that there are many perspectives and approaches to defining the term. Most definitions, however, pay attention to a number of characteristics related to the teaching-learning process and media to arrive at acceptable definitions of the term. One of the most comprehensive discussions of ODL is given by the DE Toolkit by COL.

It is important to provide a detailed conceptual clarification of the concept of open distance learning. A proper appreciation of the theme of this paper will require a common understanding of the term. ODL combines the philosophy of openness in learning with the possibilities and developments in information and communication technologies to bridge the geographical distance between the learner and the organiser or provider of learning. It is a concept which integrates a learning related philosophy with the mode and channels of learning. While it may give an impression of combining two seemingly different and unrelated aspects, the rationale behind this concept is that while open learning is a philosophy, it is distance learning which enables that philosophy to be practised even when the number of learners are large and distributed at long distances. The significance of the application of ODL to school education and teacher training is in providing the realistic possibility of a 'learner-centred' curricular transaction even in the education of masses. ODL provides learner opportunities for individualized learning in group situations.

2.2 Continuum of Openness

It is erroneous to consider ODL as an alternative mode of education and training. Both face-to-face learning and ODL fall into the same continuum of closed to open systems as depicted in Figure 1.

Figure 1: Continuum of Openness



There is no system of education that is entirely closed or entirely open. Any example of an instructional system or situation could be placed anywhere in the continuum. There could be a formal classroom based course or instructional situation (FF1) which has elements of flexibility such as use of self-learning materials, individual projects, problem solving etc. There could be another face-to-face course (FF2) which uses group based methods like lecture and such other expository methods. Obviously FF1 will be placed well ahead of FF2 towards openness in the continuum. Similarly, ODL based courses vary in their extent of openness. A course with uniform print based self-learning materials with all students irrespective of their learning style, academic background and geographical and cultural context go through the same set learning experiences although they could do it at their place of stay and pace and time (OD1). There could be another ODL course (OD2) wherein the learners are provided with multi-media resource materials including access to web-resources and opportunity for collaborative learning through computer based conferences. Thus, each learner could channel himself or herself through individually selected problem situations or assignments suiting their work and context and thereby learn through the course. It is evident that OD2 is much more learner-centred, individualized and open course than OD1.

Use of individualized learning materials, appropriate ICT, distributed learning arrangement and freedom of individual choices make it possible for ODL courses to be more open and flexible. The requirement of groups meeting regularly with uniform and rigid provision of learning experiences makes face-to-face courses less suitable to be made open. However, several elements of openness could be brought into face-to-face situations. Looking at ODL and face-to-face learning as dichotomous concepts is slowly losing currency. The two concepts are getting merged with more and more educators looking at mixed mode of instructional organization without branding courses as Face-to-Face or ODL.

2.3 ODL Characteristics

The term *open and distance learning* and its definition emerged from its elemental form of *correspondence education* during early 1980's. *ODL* gained prominence only in the past 25-30 years. The language and terms used to describe distance learning activities can still be confusing.

Geographical differences in usage, for example, between North America and Europe – can add to the confusion. Among the more commonly used terms related to open and distance learning are the following (COL): *correspondence education, home study, independent study, external studies, continuing education, distance teaching, self-instruction, adult education, technology-based or mediated education, learner-centred education, open learning, open access, flexible learning, distributed learning and* more recently *technology mediated open and distance education (Tech-mode).*

Each of these terms highlights certain aspects of open and distance learning such as the communication mode, self-learning, place of study away from the campus/classroom, use of information and communication technologies, extent of learner control over his/her learning and the extent of flexibility or autonomy enjoyed by the learner. This paper would prefer to use the term Open and Distance Learning or Open and Distance Education to broadly cover most of these concepts. But every time it would mean that the mode being described has the inherent potential of integrating the basic concepts and processes indicated in this paragraph. However the manner in which this mode has been applied in various training-learning situations or programmes could be different, impacting the quality of these programmes. While one should legitimately be critical of low quality programmes and courses through ODL, it does not necessarily mean that ODL (with the required learning processes) does not have the potential to design and deliver high quality teacher training programmes.

The concept of Open and Distance Learning (ODL) today incorporates the following characteristics:

- **Separation of teacher and learner** in time or place or in both time and place for a larger portion of the study time.
- **Institutional accreditation** by some institution or agency which involves organised learning which is accredited or certified. This type of learning is distinct from learning through your own effort without the official recognition of a learning institution.
- **Use of mixed-media courseware** including print, radio and television broadcasts, video and audio cassettes, computer-based learning and telecommunications according to the learning needs and resource conditions and access to technology. Course-ware tends to be pre-tested and validated before use.
- **Systems approach to course design** including the most feasible and effective media mix, curriculum design, theory-practice integration and technology integration.
- **Two-way communication** allowing learners and tutors to interact directly or through technology mediated synchronous or asynschronous communication.

- **Possibility of face-to-face meetings** for tutorials, learner-learner interaction, library study, and laboratory or work practice sessions.
- **Use of industrialised processes,** that is, in large-scale open and distance learning operations, labour is divided and tasks are assigned to various staff who work together in course development teams and for course delivery.

2.4. Time and Place Matrix: Experiences within Open and Distance Learning

The quality of an ODL system or programme for a particular purpose will depend on the extent to which different relevant and conducive learning processes are created through appropriate methods, techniques and technologies in order to attain the desired learning objectives. The time-space matrix in Table 1 provides a range of examples of instructional techniques/methods and technologies that could be part of a learning/ training system.

Table. 1: Time-Place Matrix of Instructional Techniques/Methods and Technologies

	Same Time	Different Time
Same Place	• Face-to-face interaction including lecture, group work, etc. • Tutorial/Contact sessions. • Conferences, symposia. • Work practice in group situations.	• Individual tutoring or contact in the institution. • Small group discussions/ laboratory work in institutions/study centres by shift. • Library reading. • Laboratory work.
Different Place	• Broadcast. • Online chat. • Teleconference. • Video-conference.	• Self-learning materials. • E-mail communication. • Postal communication. • Using OER.

Some of the experiences such as classroom lectures happen at the same time and place, thus requiring learners to be present at that time at the same place. While individual based contact sessions or counselling or laboratory work might happen at the same place but different time for different students. Broadcast is a good example of learning organised at the same time for all but learners might be listening to a radio broadcast or viewing a television programme in different places. Techniques like reading self-learning materials and e-mail communication are examples of very flexible experiences as learners can go through at one's own different place and time.

2.5 A Systems Approach to Open and Distance Learning

A systems approach to open and distance learning sets the conditions for organising course development and delivery in an orderly way in order to achieve the pre-decided learning outcomes. A systems approach also recognises that all the components of the system are interrelated and a change in one component will bring about changes in the others. All effective ODL programmes and institutions use a systematic phased model of problem solving with a sequenced and cyclic process involving various steps viz., analysing, designing, developing, implementing, evaluating and revising. This process would lead to an Instructional Design (ID) for the course. The ID reflects the integration of the most appropriate techniques and technologies to organise the study system. Every ODL based course will have an ID with the most feasible and effective combination of techniques and media and materials logically integrated to facilitate the pre-specified learning.

2.6 Design of Learning

This is probably one of the most critical quality indicators in any academic programme irrespective of levels and modes. Design of Learning is a phrase coined for the process or a design for a learning situation, designed for a specific pedagogic intension. This integrates content with pedagogic design and is critical to learning. It reflects the learning theory underlying the processes created for the learner to interact and attain the desired learning. The quality of the course depends on the extent to which the design corresponds with the learning processes and activities. The learning processes and activities could be presented using any appropriate combination of inputs using electronic or non-electronic media, the approach always has to be 'pedagogy before technology'. There are certain pedagogic elements which when incorporated in the design of learning generate processes which lead to the desired learning. These elements are given below:

Learner-centredness: Inbuilt opportunities for learner-centred and learner-controlled learning are decisive to the quality of a flexible and open learning system. The extent to which the learning materials and learner support system are centred on the learner and controlled by each leaner according to one's own learning needs determines this indicator. The course materials if suitably designed can have the required in-built access devices to provide the intended learner-centredness and the learner support system can be learner-negotiated placing the locus of control on the learner rather than the tutor.

Reflective Practice: This is a crucial indicator for courses intended to develop professional competence in learners. For example, in a management or teacher education programme there should be opportunities for learners to go through four critical processes viz. 'experiencing', 'applying', 'reflecting' and 'conceptualising' leading to

reflective practice. While discussing the pedagogical architecture named Collaborative Reflective Practice for the Graduate Certificate Programme in Open and Distance Learning in the University of Southern Queensland, Naidu refers to the Kolbe Learning Cycle which involves four processes necessary for learning to occur. These are:

- concrete experiences (e.g. laboratories, field work, observations, films);
- reflective observation (e.g. learning logs, journals, diaries, brainstorming);
- abstract conceptualisation (e.g. lectures, papers, analogies); and
- active experimentation (e.g. simulations, case studies, home work).

Dialogue in Instruction: There can be three types of dialogue that can happen in a transactional situation. These are dialogue between ***learner and content; learner and instructor; and learner and other learners.*** As regards dialogue in teleconferencing with the new form of dialogue (which is dialogue between learner and fellow learners) becoming prominent in distance education, there is a need to change our theorization about distance education. The possibility of creating various transactional processes in the instructional situation will depend on the three dimensions of dialogue that can happen in instruction which, in turn, is decided by the nature of the communication medium and instructional method adopted.

3. ODL for TE – A Global Perspective

3.1 Towards UPE and Expanding Secondary Education

Globally, there is an acknowledgement of the value of education to the countries' social and economic development. This is best illustrated by many of the countries focusing on achieving universal primary education and in doing so subscribing to the global Education For All (EFA) agenda. And in those countries where UPE has been successful, the enrolment pressure has slowly come to secondary school sector. While noting the overall increase in the number of teachers in Sub-Saharan Africa (UNESCO Statistical Yearbook: 1998), this has, however, been offset by increase in the enrollment of students into the system. As a result, there is still a severe shortage of teachers at all levels of the education system. UNESCO's Education Sector plan for 2005-07 indicates that in Sub-Saharan Africa , a conservatively estimated 4 million additional teachers will be needed by 2015 to meet the Universal Primary Education goal alone. This is in addition to the needs of literacy and health education in the non-formal systems. In some of these countries, the majority of primary education teachers have only a lower secondary qualification, often without any professional training. These personnel including large number of so-

called para-teachers enter the profession reluctantly and leave quickly.

Governments in most developing countries in Sub-Saharan Africa and South Asia are aware that the application of ODL is an appropriate and cost-effective solution for the large requirement of trained teachers in schools. This allows the teachers to get trained without having to leave work.

3.2 ODL for Teacher Education: Development Trends

The following are the major trends of development of ODL based teacher education globally. These trends are mainly based on the ongoing practice in universities and teacher education institutions in Sub-Sharan Africa, the Caribbean and South Asia.

Policy and strategy formulation: Many countries have realized the potential of ICT integrated ODL for addressing the major challenge of inadequate number of trained teachers in the primary and secondary schools. They are in the process of formulating national policies and strategies to address this challenge. National policies formulated by Kenya, Zambia and the Gambia are good examples of this trend. Zambia went a step ahead and developed a Teacher Education Strategy for the country where ODL and its application are inbuilt into the strategic directions. IT policies are also being developed in many countries which would give the required backbone for these countries to implement technology networks.

Capacity building: Developing countries both large and small ones do require to create or strengthen their physical infrastructure and human resources to develop ODL systems and materials required for teacher training. Nigeria strengthened its National Teachers Institute (NTI) which is one of the few single mode ODL institutions dedicated for teacher education. With support from several multi-lateral and bilateral agencies, NTI could strengthen its capacity in course design and development and learner support system. This has enabled NTI to increase intake and also improve quality of its programmes. Nigeria also revived its open university system by launching the National Open University of Nigeria (NOUN, 2001) adopting the large open university model similar to IGNOU. Secondary teacher training was one of its initial programmes. Lesotho with the support from World Bank converted its Lesotho College of Education to a dual mode system with additional capacity in Open and Distance Education. Another major Asian Development Bank (ADB) funded project facilitating capacity building in Sri Lanka is the Distance Education Modernisation Project (2006)

ICT integration: Country profiles on ICT developed in SSA by PHEA (2007) shows that challenges and opportunities tend to arise around a number of aspects including development and implementation of policy frameworks, pedagogy, capacity enhancement and training, technology infrastructure and connectivity, research, awareness and collaboration. Last over a decade saw systematic work taken up in several countries for

developing infrastructure for ICT and also increase access and connectivity. Countries have formulated IT or ICT policies as well as invested in electronic network and backbone to increase connectivity and communication reach. This is evident in several countries including even some poor and post conflict countries in Africa. Rwanda is a good example of intensive investment in internet infrastructure. ICT applications for teacher education in these countries range from inter-active radio (OLSET) to use of television (UNISA) and online courses and mobile technology (University of Pretoria).

3.3 Development of Open Educational Resources

Lack of adequate content in the form of effective course materials has been a major impediment in using ODL effectively in many countries all over the world. The Open Education Resources (OERs) movement supporting free resources licensed around one of the Critical Commons licences progressed considerably in this decade leading to several efforts made to develop good multi-media learning materials. African Virtual University (AVU) has been developing course materials for teacher training for use by partner universities across Africa. Virtual University of Small States of the Commonwealth (VUSSC) initiated by the Commonwealth of Learning has over a number of small countries and small islands in the consortium. They are involved in developing OER for several themes including training of educators. Teacher Education in Sub-Saharan Africa (TESSA), a consortium with 18 partners initiated by the Open University, UK, has developed and offered online OERs of multi-media materials in teacher training. These materials are used by 14 universities in Sub-Saharan Africa by differently and selectively integrating one or the other modules to each curriculum. STAMP 2000+ is a set of 46 teacher training modules in Mathematics, Science, Technology and Education. This was developed and launched by COL (2002) with the support of experts from eight southern African countries.

Course Designing: There has been significant progress in the designing of ODL course materials for teacher education globally. There is a paradigm shift from content based organization of curriculum and transaction to school situation based curriculum development with a constructivist paradigm. School based curriculum design is used in TESSA where the theory in education comes as resource for reference according to the needs of the instructional situation. Scenario-Based Learning design (Naidu et. al, 2007) is the basis for the entire curriculum and transaction of the Master in Arts in Teacher Education (MATE) developed and successfully launched by the Open University of Sri Lanka. The course materials of this programme are highly appreciated and being adopted by other institutions in the Commonwealth. This is an area which would develop further and is expected to make ODL course for teacher education more effective.

Quality Assurance: There has been some interest in the area of quality

assurance in teacher education across modes in the present decade. COL initiated a set of activities with teacher education professionals from over 15 countries in Sub-Saharan Africa, the Caribbean and South Asia. NAAC, India, took the lead along with the National Commission for Colleges of Education, Nigeria, and developed a Quality Assurance Tool-kit for Teacher Education Institutions (NAAC/COL, 2007) which is now being implemented in a few countries in the Commonwealth. Similarly NADEOSA (2005) and SAIDE in South Africa have jointly developed a QA tool with performance indicators for evaluating teacher education courses by ODL.

Facilitating collaboration and linkages: There is a trend to forge consortia of organizations with comparable concerns and goals during the last few years in education sector including open and distance education context. Cost-effectiveness is a major advantage of this model. There are successful models available of consortia based course development and delivery in ODL based teacher education. African Virtual University based in Nairobi and the Teacher Education in Sub-Saharan Africa (TESSA) are two good examples of consortia based management in Africa. Open University of Malaysia (OUM) is a privately initiated consortium. Mauritius is in the process developing an open university with a consortium model (COL,2007). Indian Consortium for School Education Transformation (I-CONSENT) is an effective example of a consortium in India. I-CONSENT offers an e-B.Ed. programme through the Yaswantrao Chavan Maharashtra Open University (YCMOU).

4. ODL for TE in India : Historical Perspective

The system of teacher education established during the colonial period continued without substantial modification except for the valuable suggestions of the University Education Commission (1948-49) for linking the programme of teacher preparation with the university system. In spite of very comprehensive and structural changes in pre-service and in-service teacher education recommended by the Secondary Education Commission (1952-53), a very large percentage of teachers in primary and secondary schools remained untrained.

Similar to the increasing need for training the untrained teachers, the demand for general undergraduate degree education was increasing beyond the capacity provided in the colleges and other institutions in the formal system of higher education. Distance education at University level in India was initiated in 1962, when the first degree programme by correspondence was offered by the University of Delhi through its School of Correspondence and Continuing Education.

The Education Commission (1964-66) did consider importance of trained teachers in schools and also recognized the potential of correspondence education for higher education. This was reflected in its recommendations. Its report emphasized the necessity of professional preparation of teachers for qualitative improvement of education. Most of

the recommendations of the Commission regarding teacher education were implemented which resulted in considerable improvement in the professional education of teachers. However, this did not lead to enough capacity in teacher education colleges to produce adequate trained teachers required for the expansion in the school system. The Education Commission (1964-66) recommended that quality of full-time teacher education institutions should be maintained and these should be supported by teacher education courses by correspondence. It emphasized the need to have one centre for correspondence education in each state preferably in the State Institutes of Education to offer both pre-service and in-service courses.

4.1 Summer School-cum-Correspondence for Teacher Training

The recommendations of the Education Commission (1964-66) for starting correspondence courses to train teachers led to strategic thinking among teacher educators about the possibility in correspondence based teacher training to deal with the challenge of training all teachers in schools. The number of teachers trained through the regular teacher training institutions was hardly adequate to meet the demand created by the expansion of school education that happened in the fifties and sixties. In order to address the problem of untrained teachers, the programme called Summer-School-cum-Correspondence Course (SSCC) was started by the Central Institute of Education (CIE) of the University of Delhi in 1966. This was a new beginning. The NCERT followed suit introducing similar courses in 1970 in its Regional Colleges of Education in Ajmer, Bhopal, Bhubaneswar and Mysore for training in-service teachers towards obtaining a B.Ed. Degree. The CIE stopped its programme in 1971 and the Regional Colleges discontinued the programme in 1985 when it was found that the large backlog of untrained teachers in schools no more existed.

4.2 Expansion of Correspondence Courses

Following the recommendations of the Education Commission (1964-66), the National Policy Resolution on Education (1968) stressed the promotion for training teachers by correspondence. It recommended that such facilities (correspondence courses) should also be developed for secondary school students, for teachers and for agricultural, industrial and other workers. Education through part-time and correspondence courses should be given the same status as full-time education. This vision shown by the Education Commission and the National Policy Resolution on Education (1968) on the potential and application of correspondence courses was well ahead of time as after almost two decades the National Policy on Education, 1986, strongly recommended the role of distance education in the promotion of education of various kinds of in-service persons especially teachers at the Primary, Secondary and Higher Secondary stages.

In the process of implementation of the NPE-1968, the University Grants Commission sent three delegations (1967 to 1971) to the USSR to study the application of correspondence courses for various purposes. All three delegations came up strongly in favour of correspondence courses for teacher training. Consequently, the next two decades saw a proliferation of B.Ed. programmes through correspondence mode. Teacher Educators were very concerned about the quality of most of these courses offered by some of the universities and this voice did get expressed through reports of NCTE (set up in 1973 by a resolution of the Government of India and was located in the NCERT) as well as the Education Panel of the UGC.

4.3 Proliferation and Commercialization of Correspondence Education

An analysis of available data by Koul and Menon (1992) showed that there were fifteen institutes of correspondence (distance) education in 1991 under the dual mode formal universities offering the B.Ed. programme through Correspondence. The available profile of student enrolment showed that nine of these universities did limit the enrolment ranging from 223 in Kakatiya University to 728 in Berhampur University. Rest seven universities had more than 1000 enrolment each and two of them enrolled more than 20,000 trainees. It is evident from the statistics that the field reality did not support the claim that enrolment in these programmes had been often very large. However, it was true of a few universities and this was no doubt alarming. Annamalai University had an enrolment of more than 21,000 students in 1990-91, the M.D. University Rohtak enrolled 33,000 in the first year of its establishment (1888-89) and Kota Open University started the B.Ed. Programme with 9,000 students in 1988-89. These universities were criticized for commercializing teacher education without giving adequate focus on quality. While one would agree to the criticism, a generalization pertaining to the quality of such programmes, involving all the universities, based on these data may not be justified as most other universities enrolled only small numbers to these programmes – eleven out of sixteen universities had manageable numbers.

A claim was being made in early nineties that the backlog of untrained secondary and higher secondary teachers was not a matter of concern any more. However, perusal of the then statistics belies the claim in no uncertain terms. While the percentage of untrained teachers came down considerably during 1970-71 to 1990-91 from 24.64 per cent to 9.05 per cent, the absolute number of untrained teachers showed only a decrease from 155 thousand to 115 thousand. This was due to large expansion of school education during the two decades and also the recruitment of untrained teachers even when trained teachers were available in some states. This strange situation was due to many political, social and demographic reasons beyond the scope of this paper. This situation led to big debate during early nineties with teacher educators in the country getting virtually divided to two opposite camps. There were two national

developments happening at that time which facilitated this debate substantially.

4.4. Emergence of IGNOU

One major development during 1980s was the emergence of open distance education as a dependable and cost-effective mode for higher education and professional education including teacher training. The Open University of UK had already demonstrated the potential of this model. Open learning movement caught momentum in India too during late seventies and early eighties leading to the setting up of the B.R. Ambedkar Open University in Hyderabad in 1983 and IGNOU at the national level in 1985. Launching of IGNOU was no doubt a landmark in the history of open and distance education in the country. Its curriculum development and transaction incorporated several innovative aspects which assured quality in its course development, materials and learning/training processes. IGNOU demonstrated through its scientifically and systematically developed courses that ODL has the potential to train teachers and other professionals in any field. IGNOU started with the development and launching of the Post-Graduate Diploma programme in Higher Education for in-service training of college teachers, a Certificate programme in Guidance and a Diploma programme in Early Child Care and Education. It also started preparation in early nineties for developing a Diploma Programme in Primary Education and a B.Ed. Programme for initial training of untrained teachers in primary and secondary schools.

4.5. Establishment of a Statutory Regulating Body for Teacher Education

The second major development was the establishment of the Statutory body called the National Council for Teacher Education in 1993 by an Act of Parliament mainly as a response to the increasing dissatisfaction among most teacher educators about the then ongoing B.Ed. correspondence courses of questionable quality. Soon after its establishment, the NCTE in its new statutory form constituted an Expert Committee to consider and give recommendations on the following terms of reference:

i. To examine the need, relevance and functioning of existing (a) part-time mode programmes and (b) correspondence/distance education programmes leading to teacher education certificates/ diplomas/degrees;
ii. To make specific recommendations for utilizing distance education mode for pre-service and in-service teacher education programmes; and
iii. To suggest ways and means to prevent commercialization in all modes of teacher education operating through (a) regular full-time mode (b) part-time mode and (c) correspondence/distance mode.

The expert committee gave its report in 1995. It considered the curriculum and transaction of the ongoing correspondence/distance education courses and made some very scathing comments on the potential of distance education courses. Some of the comments of the committee are given below:

- Probably the only part of teacher education that a correspondence/distance education programme can claim to do effectively is the theoretical aspects of teacher education.
- The correspondence/distance education system is completely unsuitable for providing effective education in the practical aspects of teacher education.
- As regards practice teaching, which is the most important part of professional teacher education that enables the student to acquire the competencies expected of a teacher, the correspondence/distance education has no way of organizing and controlling the experience to make it fruitful.
- Correspondence/distance education has no way of providing such practical experiences in the community other than practice teaching.

The intentions of the committee were commendable. They had great concern for the low quality of some of the B.Ed. courses offered by correspondence/distance mode and showed great eagerness in recommending the discontinuance of all teacher education courses leading to first training degree by correspondence/distance education. What they have observed above was probably true of training system and design adopted by the correspondence institutes then. However, the committee did not consider the full potential and possibilities of the ODL system as manifested by many institutions both in developed and developing countries outside India nor considered seriously the potential of the learning/training system being developed in IGNOU. Its recommendations came out of the following two major premises.

- One, all members were very alarmed by the commercialization of teacher education by mainly a couple of Universities who without adequate infrastructure and human resources had during that time enrolled more that 20,000 trainees in each case charging very high fees. And hence, the committee particularly wanted to stop this commercialization.
- Two, the Committee was not advised properly about the concept and possibilities of distance education mode. The Committee neither had enough expertise in distance education nor given adequate time to study effective ODL systems. Hence, it took a very narrow definition of distance education which was not acceptable internationally even then. Incidentally, IGNOU had already completed 10 years by then and had launched two

programmes in teacher education in an effective and systematic way, one, for college teachers and the other for primary school teachers. Certificate Programme in Guidance for primary teachers, launched in 1993 was selected by UNESCO for a case study (Mehrotra, 2000) and the programme was well appreciated.

On the recommendations of the Expert Committee, the NCTE ruled that teacher education by correspondence/distance mode should not be used for first diploma or degree and can be used only for in-service training. It also limited the enrolment and came out with certain strict norms and standards.

5. Programmes and Courses

A perusal of teacher education programmes offered by open and distance learning mode in India will show that this mode of teacher education has been slowly but steadily growing with both credit and non-credit courses mainly for working teachers at all levels. Organizations offering these courses also range from those at national level such as Indira Gandhi National Open University, National Institute of Open Schooling, National Council for Educational Research and Training (NCERT) to state open universities, state open schools and dual mode universities and non-profit institutions such as the Centre for Environment Education (CEE) and Deemed Universities like the Tata Institute of Social Sciences (TISS). IGNOU has courses to train teachers for the entire school spectrum and higher education.

ODL system is now extensively used for providing ongoing professional support to teachers. DEP-DPEP initiated in 1995, as part of DPEP, was integrated to Sarva Shiksha Abhiyan (SSA) and made part of IGNOU as DEP-SSA. Its mandate is to help states in providing in-service training to teachers using ODL and ICT.

Four exemplar cases of innovative programmes are given below to provide an insight into the nature of ODL based teacher education courses offered in India today.

5.1 Case 1: Diploma in Guidance and Counselling - NCERT

International Diploma Course in Guidance and Counselling by blended mode is being offered by NCERT. This course developed with support from the Commonwealth of Learning is of one year duration with a unique blend of distance/online and face-to-face modes and is open to candidates from India, other SAARC and Afro-Asian countries. This course comprises theoretical instruction, practical work and internship. The theory courses are in line with basic elements provided in certified counsellor education programmes all over the world, which are focused on study of interpersonal relationships and behavioural sciences, personality and human development theories, including career and lifeskills development.

The instructional system consists of well-structured self-instructional modules, video programmes, practical work and contact programme in regional colleges and other selected centres, assignment, project work and online tutorial support.

5.2 Case 2: Bachelor of Education - IGNOU

It is a well-structured programme with an innovative curriculum focused on the classroom, school and the community and the teachers' role in these contexts. Integration between theory and practice has also been attempted to some extent. The programme is of 2 years duration for untrained teachers in schools. Its instructional system consists of well structured self-learning materials supported by theory based and practical assignments, audio and video programmes and three dimensions of practical work viz. practice teaching, school-based practical work and workshop based practice. In addition, there are contact sessions and teleconferencing. IGNOU's strong infrastructure for learners' support helps in making the programme effective.

5.3 Case 3: Green Teacher-Online - CEE

Green Teacher is a one-year 'Diploma in Environmental Education' for teachers and educators developed and designed by CEE India in partnership with the COL, Canada. Offered initially through print based distance mode, is now available online: Green Teacher Online. This course is the first of its kind in India designed with the objective to enable teacher-learners to effectively take up environmental concerns and issues in the classroom and engage their students in practical, action-oriented Environmental Education (EE) activities and projects. Thus, Green teacher is a continuing learning opportunity in EE for practicing teachers. Some significant features of ICT-enabled learning adopted in this course are:

- Bringing training to the door-step of the learners on-the-job, on-site;
- Providing scope for developing a flexible training design;
- Providing effective, efficient and adaptable versions of training material to suit individual learner's need, making learning more customised;
- Providing real-time learning on-demand training;
- Providing more choices and options to learners, thereby making learning experiences more relevant for individual needs;
- Enabling very high scope for learner participation and reflection in the training programme (comment, contribute and provide feedback to the training design and content thereby ensuring that learners appropriately also become facilitators/trainers);
- Enabling the training experience to be not just 'learner-centred' but also 'learner-controlled'; and

- ICT-enabled tools can help make 'learner-support' more responsive and supportive.

5.4 e-B.Ed. Programme - YCMOU through I-CONSENT

The programme of Bachelor of e-Education or e-B. Ed. is designed as a new paradigm programme suitable for a connected society in which learning-working-developing is integrated. e-B.Ed programme is designed in response to the connected society being created by the use of modern information communication technology (ICT). The programme is based on the constructivist theory of learning. It is the 'scenario based situated learning and situated development' model. The situations in the e-B.Ed. programmes are the classrooms, schools and community around the school. All students and teachers will be linked with internet connectivity and will form a learning community interested in applying the subject knowledge to the situated development and the learning obtained from the development. Study of a student is based on completion of various activities and assignments that promote competencies and capabilities and helps him/her to play various roles a teacher has to carry out in various scenarios, developed as a part of the new information society. The courses of e-B.Ed. get linked with various settings of technology access obtained in different schools.

6. Curriculum Design and Transaction

A conceptual discussion about instructional designing involving combination and integration of instructional components including various methods, materials and media and design of learning integrating effective elements of learning based on learning theories is presented in sections 2.5 and 2.6. One of the major debates in teacher education which started in early 1970s and continued till the end of the century in India was the quality of the teacher education courses offered by correspondence and distance education. This section examines four major phases of teacher education courses by correspondence and open and distance learning in India based on the nature and quality of designing of curriculum, instructional system and learning processes and discusses critically the comparative effectiveness of each. The four major phases are:

i. The summer school-cum-correspondence courses (SSCC) in teacher training offered by CIE and the NCERT were mainly emphasizing the four months contact programme with correspondence notes.
ii. B.Ed. courses by correspondence which proliferated in the seventies and eighties were mainly correspondence courses with limited contact.
iii. Well-structured teacher education courses offered by IGNOU with strong course development design and instructional design and for the first time in the country with ICT support.

iv. Recent developments in innovative designs applying constructivist approach to learning.

6.1. Phase-1: Summer School-cum-Correspondence Courses

This phase extends from late sixties to early eighties. It is interesting to note that although the SSCC is considered to be the pioneer of using correspondence mode for degree programme in teacher education, the structure and emphasis of contact in this programme shows that this was more a shortened face-to-face training programme with minor support from correspondence lessons. The SSCC course of the RCEs constituted 16 weeks (two summer courses each of 8 weeks) during which nearly two-third of the total course was taught by competent faculty members of the college supported by visiting professors and the teacher-student ratio was 1:10. Only about one-third of each theory paper was taught through correspondence lessons. Teacher education professionals in India even today consider these courses to be fairly effective because it had two large slots of summer schools of 4 weeks each which provided opportunities for contact and these were much stronger than many of those correspondence/distance mode courses launched by Indian universities during the next almost 25 years.

A critical analysis of the SSCC programme will show that it had a fairly weak instructional design and learning design. The lessons did not have the inbuilt learning access devices to encourage self-learning and hence, acted as only good class notes which helped the trainees in passing the examination. It is important to indicate here that self-learning materials were popular internationally in the seventies after the establishment of the Open University. Even in India, seventies and eighties recorded a large quantum of research and development activity in programmed instruction and alternate forms of effective self-learning materials used in teaching and learning with good instructional designs based on applications of systems approach (Survey of Education Research in India, 1 and 2). However these developments did not have much of an impact on either the SSCC model or the correspondence courses under phase 2 that proliferated in India after 1970. Similarly, the contact classes were only a number of good lectures with very less emphasis on much critical dialogues or reflective practice.

6.2. Phase-2: B.Ed. Courses by Correspondence

This phase extends from early seventies to mid-nineties till many of these courses were discontinued due to NCTE regulations. Most of these courses were quite weak from the point of view of instructional and learning designs. They followed a simple design of a combination of reading materials with short contact classes, a limited school teaching sessions and assignments. Reading materials were mostly not well written lessons with no inbuilt access devices which facilitate learning. Contact sessions

Table 2. Design details in the four phases of ODL based teacher training

	Course/ Programmes	Curriculum Design	Instructional/Course Design	Nature of Learning materials	Learner Support System	ICT use
Phase- 1: 1967-1981	Summer-School cum Correspondence Course - (SSCC)- B.Ed. CIE and RCEs	Adoption of Formal B.Ed programme- theory based curriculum content	Extension of the formal programmes Theory teaching with substantial contact and practice	Correspondence lessons and other support print materials	Very organized lectures with less discussion by competent staff in small groups	Nil
Phase- 2: 1970-1995	B.Ed programme by correspondence/ distance education by dual mode universities	Formal B.Ed. Curricu-lum-theory based curriculum content	Simple correspondence education design. Theory teaching with limited contact and practice	Correspondence lessons	Minimum contact	Nil
Phase- 3: 1985-	Teacher Education courses by ODL - IGNOU	Specially developed Curriculum without losing the essentials of formal curriculum-mostly theory based curriculum content	Theory based model with scientifically designed courses adopting systems approach to course development. Sufficient contact and practical work (structured)	Well designed Self-instructional materials	Adequate contact in counseling sessions, extended contact workshops and school based practical.	Audio and video programmes, teleconfer-encing
Phase- 4: 2000-	Innovative Teacher Education programmes- e-B.Ed by I-CONSENT; Diploma in Environ-ment Education by CEE	School and educational situation based curriculum with provision for problem solving and decision making supported by required theory at relevant places	Situated Learning Design based on Constructivist learning theory	Learner centred materials and cases, scenarios, problems, etc. facilitating situated learning	Individualised support through on-line tutoring and peer-group discussions	Multi-media and online offer

in most cases were insufficient and were badly organized in large groups. Some of them were very badly managed also due to very large numbers enrolled. Those universities which offered B.Ed. courses by correspondence to very large number of trainees even in early nineties did not have good self-learning materials. By then India had a strong research base in effective self-learning materials as well as the success experience of fairly well developed course materials by IGNOU. It may also be said that some dual-mode universities and new open universities either used IGNOU materials or started using the format somewhat successfully. But even in those cases the contact, sessions remained mostly weak.

6.3. Phase-3: Teacher Education Courses by IGNOU and after

Launching of IGNOU in 1985 no doubt was a landmark in the history of open and distance education in India. IGNOU invested heavily on developing capacity in Course Designing, Self-Instructional Materials, Learner Support Systems and ICTs. Its early linkage with the Open University of UK and other international experiences did create an environment of training and development leading to capacity building in various aspects of ODL. This led to the designing and launching of several effective courses including a PG Diploma in Higher Education for college teachers in 1992 and a Certificate in Guidance for primary teachers in 1993.

IGNOU's teacher education courses followed a curriculum and course development process based on systems approach discussed in Section 2.5. It followed a multi-stage process of 'course team' based development of materials with multi-media instructional design and a strong learner support system.

6.4. Phase-4: Recent Developments in innovative designs

There are a number of innovative attempts made internationally and a few in India in designing teacher education programmes both in the face-to-face mode as well as ODL mode. In some of these innovations, there is a paradigm shift from trainees '*learning education theory leading to application and practice*' to '*engaging in educational situations and contexts to solve problems and take appropriate decisions drawing educational concepts from resources as and when required*'. Elements of this innovative approach did appear in certain components of two programmes developed by IGNOU during 1992-1995 viz. Certificate in Guidance Programme and PG Diploma in Higher Education. However, these programmes also remained mostly theory oriented.

Based on the processes involved in the collaborative reflective practice, it is possible to conceptualize a teacher development curriculum for an ODL based programme or course. The reading materials, media based materials, resource materials, interactive sessions including face-

to-face contact classes and technology based interaction, assignments and projects could play appropriate roles in facilitating the trainee going through the processes of *collaborative reflective practice.* The core reading and other media materials would consist of cases, stories, critical incidents, scenarios, simulations and problems derived from the classroom, school and community situations based on the roles the teacher has to play and the competencies he/she has to develop to function effectively in these situations.

This approach follows a situated learning design (design of learning) which allows a pedagogically sound approach of learning in a situated manner within the real job context. The cases, problems etc. are designed and developed in such a way that the trainee while going through them will at appropriate points have to take a decision, perform an activity, experience in real situations and/or an audio-video episode, recall prior experiences, read a relevant theoretical writing or factual information and/ or reflect on the issue either individually or collaboratively (dialogue in instruction) in face-to-face or technology mediated human interaction situations. Such a transactional process will involve Collaborative Reflective Practice and is expected to develop in the trainees those competencies required for performing the pre-specified roles effectively. The Constructivist approach allowing each individual to follow unique learning path and construct one's own knowledge and develop competencies does indicate that the there is learner-centredness in the curriculum transaction facilitated by flexible and alternative learning activities.

7. ICT-ODL integration

Information and Communication Technology (ICT) involves a variety of technologies ranging from simple print based communication to on-line or internet based communication. Each of these technologies has a place in learning according to the learning objectives, availability of infrastructure and access, learner profile and suitability for certain type of learning experience within a learning design, etc.

Various possibilities in the use of ICT have been tried for teacher training and ongoing professional development of teachers in the last almost five decades in India. Initially, *radio* was used followed by *television* and *audio* and *video* programmes. Today *computers* and *internet* and different types of *teleconferencing* and *webcasting* are being tried out. All these technologies fall into an ICT spectrum covering low-end to high-end technologies (Figure 2).

Figure 2: ICT Spectrum



Print - Radio - ATR - TV - VCR - Teleconference - Computer - Internet

This section presents how the different applications of ICT have been integrated to transaction of teacher education through Open and Distance Learning.

Figure-3: Development of ICT integration in the ODL based teacher education scenario in India

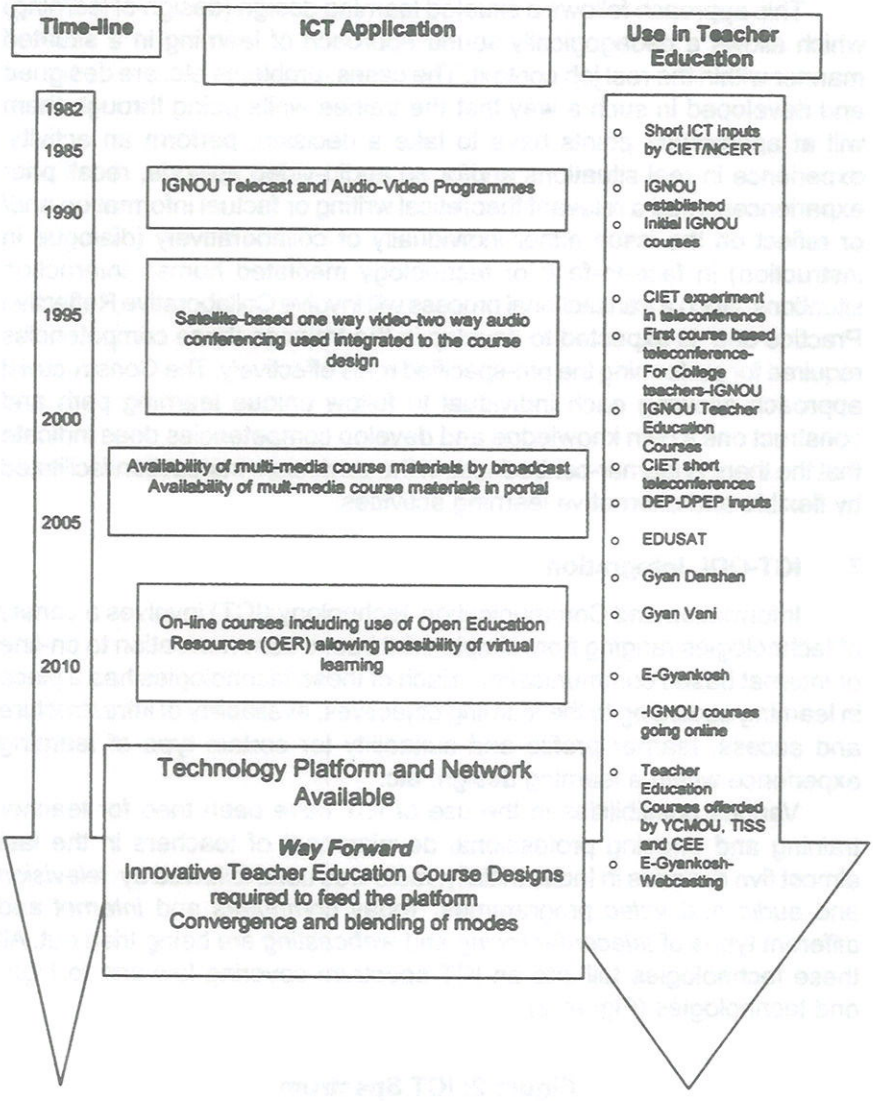


Figure 3 shows that in the development of ODL based teacher education programmes since 1982 integration of non-print form of ICT was not tried out in the correspondence/distance education based teacher education in the first two phases. The launching of Open Universities including the Indira Gandhi National Open University (phase-3) resulted in development of modules consisting of print, audio and video and its delivery through broadcast, non-broadcast and teleconferencing mode. Some of these programmes are for professional development of teachers at primary, secondary and tertiary levels.

Audio-video programmes and telecast supplemented most of IGNOU courses including teacher education. PG Diploma in Higher Education developed and launched in 1992 was the first higher education programme in the country to have used teleconferencing as a component integrated to the course design. This was a great success. Today all teacher education courses offered by IGNOU use audio-video programmes and teleconferencing either as supplementary experience or integrated to the learning system.

Further, development in this direction took place with the launch of *Gyan Darshan* and later *Gyan Vani* and more recently e-Gyankosh within Phase four. IGNOU started working on e-Gyankosh since 2005. In 2008, it made a landmark launching of e-Gyankosh with over 80 per cent of IGNOU materials available through web-casting with a content and learner management system dedicated to IGNOU courses. It also launched two courses entirely on-line one of them being M. Lib. Science which has a large component of practical work. Time is ripe now to design and develop a teacher education course entirely on-line by IGNOU. Yashwantrao Chavan Maharashtra Open University (YCMOU) along with Maharashtra Knowledge Cooperation Ltd. (MKCL) and other partners of I-CONSENT is launching an e-B.Ed. Programme on-line with an innovative Scenario-Based Design to training e-teachers. This is a very significant development.

On-line interactive learning and use of Open Education Resources (OERs) are also slowly being introduced in the ODL based teacher education courses in the new millennium. In addition to e-B.Ed. offered by YCMOU through I-CONSENT, other on-line courses for teacher education are also being launched. Green Teacher on-line leading to a Diploma in Environment Education by Centre for Environment Education and Diploma in Guidance and Counselling by NCERT are examples where e-learning has been used for teacher education. The potential of e-learning to provide collaborative and reflective practice is being tried out in these courses.

India today has the required expertise, infrastructure and networking with effective on-line platforms available in IGNOU, MKCL and other institutions for offering courses in teacher education. India also has reasonably adequate experience in formulating effective curriculum and learning designs capable of providing a conducive training environment within which teachers with required competencies could be developed.

8. **Recognition** and Quality Assurance in ODL based Teacher Education

8.1. Pre-NCTE (Statutory) Period

Recognition and quality assurance in ODL based Teacher Education has always been a matter of concern to teacher education professionals and policy makers in the country. Initially, this responsibility was only with the governing structures within universities facilitated by the recommendations provided by the NCERT and the Panel for Education under UGC. The non-statutory National Council for Teacher Education (NCTE) was set up in 1973 by a resolution of the Government of India and was located in the NCERT mainly to provide recommendations to universities and teacher education institutions on curriculum development and transaction and related matters. It brought out curriculum framework for teacher education at primary and secondary levels and also advised institutions on matters related to quality in teacher education. However, NCTE at that time being only a non-statutory body had only recommendatory role to play. This is evident from the fact that the proliferation and commercialization of B.Ed. correspondence/distance education programme by several dual mode Universities in the country continued in spite of the recommendations of NCTE against them during seventies and eighties. University Acts provided them adequate autonomy to launch and organize courses.

8.2. Establishment of a Statutory Body

The National Council for Teacher Education Act No. 73 of 1993 was passed in the Parliament on 29 December 1993. The Act provided *"for the establishment of a National Council for Teacher Education with a view to achieving planned and coordinated development of the teacher education system throughout the country, the regulation and proper maintenance of norms and standards in teacher education system and for matters connected therewith"*. In the Act, *"teacher education"* means programmes of education, research or training of persons for equipping them to teach at pre-primary, primary, secondary and senior secondary stages in schools and includes non-formal education, part-time education, adult education and correspondence education. Under functions of the Council, the Act specifies, among other things, that the Council may:

- *"lay down norms for any specified category of courses or training in teacher education, including the minimum eligibility criteria for admission thereof, and the method of selection of candidates, duration of the course, course contents and mode of curriculum";*
- *"take all necessary steps to prevent commercialization of teacher education".*

Although open and distance education was not specifically mentioned in the Act, the new Council got it rectified by a resolution that the term 'correspondence education' shall also include other related modes such

as open universities and distance education.

8.3. Role of Distance Education Council under IGNOU

IGNOU Act of 1985 included a statutory body called the Distance Education Council (DEC) within IGNOU to regulate quality of open universities and distance education institutions. The statute states: *"Consistent with the duty of the University to take all such steps as it may deem fit for the promotion of the Open University and distance education systems in the educational pattern of the country and for the coordination and determination of standards of teaching, evaluation research in such systems; and in pursuance of the objects of the University to encourage greater flexibility, diversity, accessibility, mobility and innovation in education at the University level by making full use of the latest scientific knowledge and new educational technology, and to further cooperation between the existing Universities, it is considered necessary and expedient to establish a Distance Education Council as an authority of the University under Section 16 of the Act.*

8.4. Facilitative Role of NAAC

The National Assessment and Accreditation Council (NAAC) is an autonomous organization established within UGC in 1994, on the recommendation of the National Policy on Education (NPE 1986) and its sequential Programme of Action (PoA 1992). It is the only external quality assurance body in India. Its vision is to make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance of initiatives.

8.5. Joint efforts of NCTE, DEC and NAAC

Extensive discussions happened during late nineties between NCTE and DEC (IGNOU) on one side and NCTE and NAAC on the other. There were also concerns about each other's statutory power and extent of coverage.

NCTE was considered primarily responsible for recognition of teacher education courses leading to first Diploma and Degree in pre-primary, elementary and secondary teacher education in campus based, part-time and distance education modes. Accordingly, NCTE has formulated Norms and Standards for recognizing Diploma in Elementary Education, Bachelor of Education and Master of Education programmes offered by distance education mode.

DEC was mandated with quality assurance in all open distance learning courses including those for teacher education and hence, NCTE and DEC constituted a joint committee to jointly execute the recognition task for teacher education programmes offered by ODL. An MOU was signed between NCTE and DEC of IGNOU in 2004 with a number of aims and objectives including:

- "carry out the various functions of NCTE, as mandated under its Act and ensure coordinated and integrated development of teacher education under distance mode in the country by maintenance of Norms and Standards"; and
- "jointly determine and implement the Norms and Standards for teacher education in distance mode, as laid down and amended from time to time, for Diploma / Degree / PG level studies in the field of teacher education".

Similarly, NCTE also signed an MOU with NAAC. Both NAAC and NCTE are the outcomes of the recommendations contained in the NPE and PoA. While the enactment of the NCTE Act by the Parliament in 1993 marked the most purposeful and determined action taken at the National level to place teacher education at a high pedestal, the establishment of NAAC by the University Grants Commission (UGC) in 1994, signaled an equally lofty resolve in uplifting the quality of Higher Education including that of higher education offered by alternative modes such as open and distance leaning. In fulfilment of the provisions laid down in the NCTE Act 12(k) "to evolve suitable performance appraisal systems, norms and mechanisms for enforcing accountability on recognized institutions" and for quality assurance of Teacher Education Institutions (TEIs), the NAAC and the NCTE have entered into an MoU for executing the process of assessment and accreditation of all TEIs coming under the provisions of the NCTE Act. The efforts of NCTE and NAAC to ensure and assure the quality of TEIs in the country are complimentary to each other. Combining the expertise of NCTE in teacher education and of NAAC in quality assurance expertise, the NAAC developed the methodology for assessment and accreditation of TEIs and the "*Manual for Self-appraisal of Teacher Education Institutions*".

The norms and standards for a teacher education programme through open and distance learning system formulated for D.Ed., B.Ed. and M.Ed. by NCTE constitute primarily aspects such as duration, number of intake, admission eligibility, admission procedure, infrastructure and human resources for teaching and learning related support, number of contact days/hours, quantum of practical work etc. DEC norms would also include the format and style of the self-learning materials and other study materials. These norms and standards basically define the minimum standard required for each programme to be recognized and this recognition is renewed periodically. The role of NAAC being quality assurance, it facilitates self-appraisal and external evaluation with an aim to support enhancing quality in various aspects of the institutional functioning. It gives considerable emphasis for institutional processes along with inputs and output performance.

With an assumption that there are several basic quality indicators in programmes and institutions which are common to all modes, NAAC along with the Commonwealth of Learning brought out a 'Quality Assurance

Tool-kit for Teacher Education Institutions' including institutions of open and distance learning. The Tool-kit was developed with the involvement of over 300 teacher education professionals from all over Commonwealth.

9. Way Forward

India has more than forty years of experience in offering teacher education programmes and courses using initially correspondence mode and later open and distance learning mode. Use of ICT in combination with other non-electronic media started in mid-eighties and today India has the national ICT infrastructure adequate enough to launch programmes entirely though e-learning. ODL based teacher education especially for in-service teacher education will develop and continue to provide training to many teachers and other personnel in the system.

In India, developments in ICT infrastructure and connectivity are growing steadily providing access to majority of people in the country. ICT applications for open and distance education is being developed and provided by IGNOU and other open universities and other autonomous organizations. Technology and platforms for on-line provision of courses are available. In the coming years we hope to see more development in innovative course designs with appropriate pedagogy or learning designs suitable to various kinds of learning and training using on-line platforms.

Face-to-face education/training and ODL based education/training were for a long time considered parallel modes with definite characteristics. Hence, institutions offering only one of these modes were called single mode universities/institutions to differentiate from dual mode universities/ institutions which offered courses through both modes. When there has been flexibility in dual mode institutions for students to combine course study from both the modes, these were called as mixed mode institutions. This classification still continues in many countries. However, with the development and use of ICT in both face-to-face and ODL modes, the differentiating characteristics are getting blurred. There are universities where the students, although stay in the campus, learn most of the time through distance learning techniques including on-line learning. There is definitely a trend towards convergence of both the modes.

There is definitely an increasing trend of shift of control of learning from the providers to the learners. Earlier models of ODL such as the correspondence courses and distance teaching universities are essentially institution or provider controlled. The open universities did try to create more flexibility in course delivery and learner support facilitating more and more focus on the individual learner. With appropriate technologies becoming accessible and cheaper to the learner, the possibility of each learner planning and organizing his or her learning in one's own way is increasing. This is bound to happen in teacher education too especially in ODL based in-service teacher training where each teacher would be able to identify the required competencies one wants to develop and enroll in

courses accordingly through on-line or blended modes. He or she should be able to complete the course at one's own pace mostly learning with the support of Open Education Resources (OERs), interact with other teachers and experts through synchronous and non-synchronous online interaction, and practice by applying the learning in one's own teaching and other school based activities. All these would facilitate him/her to have collaborative reflective practice leading to development of the relevant competencies.

Quality assurance in ODL based teacher training is another area which would attract more attention in the coming years. It is hoped that the NCTE, DEC and NAAC will work more closely to make sure that quality is never sacrificed along with encouraging the adoption of innovative designs and technologies for teacher training. The focus today by agencies like NCTE and DEC is to provide standard models and frameworks of quality curriculum and transaction systems expecting all institutions to follow that. While this is required, agencies should encourage and foster creativity and flexibility for innovative curriculum and systems to emerge and flourish. Prescribed norms and standards are important, provided what is to be encouraged is to follow the spirit of those requirements rather than forcing institutions to follow them mechanically.

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Chapter 12

Professionalisation of Teacher Education

G.L. ARORA

1. Backdrop

The term 'professionalisation' is derived from the term 'professional' which, in turn, is derived from the term 'profession'. Thus, the meaning and nature of professionalisation have to be the extension of the other two terms namely, 'profession' and 'professional'.

Concept of a Profession

During the past few decades, the number of vocations has increased and is likely to further increase in the future in response to technological advancements and ever-expanding knowledge frontiers. In the world of work, there are thousands of vocations which require varying degrees of expertise, but only a few vocations have acquired the socially recognized status of 'profession'. The characteristics of a profession which entitle a vocation or an occupation to be recognized as such are:

(a) It has a vast knowledge base which continues to expand further as a result of research in the concerned discipline.

(b) The existence of a vast amount of knowledge necessitates a sufficiently long period of preparation on the part of an individual to become a member of the profession.

(c) The ever-expanding frontiers of knowledge in the concerned discipline alongwith technological advancements, implies that initial preparation, howsoever long, does not prove sufficient for all times to come and, therefore, a professional is required to continue his education and training throughout his professional career for the acquisition of latest knowledge and new skills. The members of a profession have to be life-long learners.

(d) A profession is self-regulatory with an internal locus of control.

This implies that members of a profession collectively evolve a code of ethical principles governing their conduct and performance. They also evolve a suitable mechanism for their observance and enforcement. This helps the profession to keep itself free from external controls in order to maintain its dignity and autonomy.

The professions of doctors, lawyers, engineers, accountants, scientists, historians, economists and social scientists fulfil the above mentioned criteria and, therefore, are universally recognized as professions. By virtue of being practicing members of these professions, they are rightly recognized as 'professionals'. The profession of teachers at the school as well as college level also fulfils the above mentioned criteria. The knowledge base of the subjects that a teacher studies at the undergraduate or post-graduate level is quite vast and is continuously expanding further. In addition, the teacher needs knowledge and skills required for teaching and for mentoring children for wholesome development of their personality. The knowledge base of pedagogy and related sciences like psychology, philosophy, sociology, etc. is also quite vast. The period of initial preparation of teachers at different levels is between 15 to 20 years. Like other professionals, a teacher is also expected to be a life-long learner in order to remain upto date not only in the academic disciplines but also in the science of pedagogy. Thus, teaching qualifies to be recognized as a profession and teachers fully deserve to be perceived as 'professionals'.

As discussed above, the professions have certain characteristics which differentiate them from other vocations not recognized as professions. Likewise, 'professionals' have certain traits because of which they are a class apart from non-professionals, that is, the persons pursuing other vocations. It is expected that a 'professional':

(i) possesses thorough understanding of the theoretical base of his profession and knows how to organize various professional practices and tasks in tune with the relevant theoretical knowledge.

(ii) possesses thorough understanding of the social, political, economic, constitutional and legal contexts in which he is called upon to perform the obligations of the profession.

(iii) possesses the skills essentially required for discharging varied professional responsibilities such as the use of electrical, mechanical and electronic devices, location of reference material, preparation of papers for publication and presentation in seminars, participation in discussions, etc.

(iv) continuously updates his knowledge and fine-tunes professional skills through self-study and participation in seminars, conferences, orientation and training programmes.

(v) is committed to the profession and contributes towards its further

development and enhancement in status and prestige.

(vi) approaches his responsibilities in a professional manner, that is, he is systematic, focused and goal-directed in approach.

(vii) follows faithfully and willingly the code of ethics prescribed for the profession.

(viii) strives to be a reflective practitioner of the profession, that is, continuously reflects on the theoretical and practical aspects of the profession leading to their enrichment. In other words, he does not remain content with the repetition of the current practices year after year in a routinised manner.

In short, a professional is a knowledgeable, competent and skilled person committed to one's profession, on the one hand, and to the welfare and service of the society, on the other.

2. Who is a Professional Teacher?

A professional teacher, that is, a teacher possessing high degree of 'professionalism' approaches each of his professional tasks and responsibilities in a planned and systematic manner with high level of efficiency. More specifically, a professional teacher:

- possesses reasonably sufficient level of mastery over the content knowledge of the subject, he teachers to his students. He validates or invalidates the 'given' knowledge and constructs new knowledge on the basis of his own experiences, observations and reflections and encourages his students to do the same.
- continuously strives to update his knowledge through self-study, reflections, discussion with colleagues and participation in orientation or training programmes.
- is a keen observer of children's behaviour in different settings inside or outside the school. He examines the prevalent concepts related to children's development through his own studies.
- is sincerely committed to the students and always keeps their interests above every thing else including, his own personal interests.
- is committed to the teaching profession, strives to contribute towards its further development and does nothing to lower its reputation in the society.
- is well aware of his social obligations and does nothing to violate the basic principles of our Constitution and to loosen the moral and social fabric of society.
- is well-versed in providing guidance and counselling to students and is always willing to help them in solving their problems.
- possesses a fair amount of expertise in various professional tasks such as teaching, testing, curriculum making, textbook writing, preparing teaching aids, etc.

- combines in himself some rudimentary traits of many professional artists like a story teller, a dramatist, a painter, an actor, a singer, a writer, etc.
- is always eager to hone his professional skills through training and practice.
- is an effective manager of available resources, both human and non-human, and knows how to generate additional resources, if required.
- knows the art of managing classrooms, that is, maintaining proper learning environment in the class and sustaining students' motivation in learning.
- knows how to contextualize his teaching and other professional tasks, that is, he is well aware of the socio-cultural context in which his school is functioning and the students are being brought up. He is not only aware of the social customs, folk tales, folk songs, folk arts, fairs and festivals, flora and fauna and sayings prevalent in the surrounding areas of the school but is also in a position to use the school's physical, social and cultural environment as a teaching learning resource.

A majority of school teachers in our country, when assessed against the above mentioned criteria of 'professionalism', are found to be possessing it in very small degrees. A number of studies conducted under the District Primary Education Programme (DPEP) and the Sarva Shiksha Abhiyan (SSA) revealed that the teachers' own knowledge of the subject content was not superior to that of the students whom they teach. Most of the teachers perceive 'teaching' as a simple and routine task of transmitting the knowledge and information given in the books to the students and repeating it mechanically year after year without any alteration or addition.

They are seldom enthusiastic about their participation in the in-service education programmes and as and when they do so, they turn out to be reluctant, disinterested and demotivated participants. However, this is also true that in many cases, their reluctance and demotivation arises out of adhocism and lack of professionalism in the organization of in-service education.

In view of their obsession with mere transmission of information, they seldom bother to construct new knowledge or validate the 'given' knowledge on the basis of their own observations and reflections. Their pre-occupation with transmission of information makes them oblivious about their social obligations and about their commitment and responsibilities towards their profession and students. The very thought of professional responsibilities other than teaching, and that too in the narrow sense of syllabus coverage, makes them uncomfortable.

It may be inferred from the above discussion that majority of present day teachers lack 'professionalism' in varying degrees. This may be due to (i) erosion of social and moral values in the society, (ii) teachers' low

status, respect and credibility in the society, (iii) entry of such persons in the profession as are neither suitable nor have inclination for it, and (iv) failure of the teacher education system to lay foundations of 'professionalism' among prospective teachers. While lack of 'professionalism' among teachers may be a combined effect of all the four factors mentioned above, professionalisation of teacher education is likely to make up the lack of professionalism resulting from the other three factors.

3. Professionalisation of Teacher Education

What does 'professionalisation' of teacher education mean? Obviously, it implies high degree of 'professionalism' in every aspect and at every stage of its organization. How to professionalize teacher education, both pre-service and in-service? However, before discussing ways and means to professionalize teacher education, it appears appropriate to consider the characteristics of 'professionalism' among teacher educators who have to shoulder the major responsibility of professionalizing it.

3.1 Being a Professional Teacher Educator

A 'professional' teacher educator possesses all the attributes of a 'professional' teacher. In addition, he/she possesses the following attributes:

- He/she understands that education as a field of study is inter-disciplinary in nature as it draws its content from several disciplines like psychology, philosophy, sociology, etc. Therefore, besides keeping track of new initiatives in educational policies, schemes, programmes and innovations in educational practices, he/she also keeps himself/herself abreast of new researches in the allied disciplines and reflects on their possible implications for educational theory and practice
- It is a matter of common knowledge that teacher educators teaching 'methodology courses' in colleges of education do not remain in touch with the new developments in the content of the subject of school teaching. In view of their pre-occupation with the teaching of 'methods' alone, they tend to ignore the need for updating and refreshing their knowledge of the subject. But, a professional teacher educator, continues to remain a reflective learner both in the content and pedagogy of the school subject he teaches.
- A 'professional' teacher educator is capable of conducting research in the selected areas of study through a variety of means including observation, discussion, interaction, etc. He makes an attempt to cross-check the validity of his findings against the findings of other researchers as reported in the educational literature.
- He is well versed not only in the terminology of research but

also in its methodology and as such can easily find out the weaknesses and strengths of research reported in journals and can also work out the plan for the utilization of appropriate research findings in various teacher tasks.

- Besides observing children's behaviour in school and out of school settings, a professional teacher educator is a keen observer of the social, cultural, political and economic developments or events in one's own state in particular and in the country and in the world in general. On the basis of critical analysis and reflections on such events, he makes an attempt to construct pedagogical knowledge for further discussion with colleagues and prospective teachers.
- He creates or joins the network of fellow professionals in the study circles, seminars and conferences for exchange of ideas and experiences.

3.2 Role of Major Players towards Professionalisation of Teacher Education

Besides teacher educators, there are quite a few other players who have a major role in the professionalisation of teacher education such as the UGC, the NCTE, the statutory regulatory bodies specifically created for higher education and teacher education respectively, affiliating bodies like universities and SCERTs, R&D institutions like NCERT and curriculum development bodies like Boards of Studies and finally, the schools where teacher trainees have to carry out the field work and practice teaching. The NCTE has the wherewithal to bring about 'professionalisation' in teacher education by evolving appropriate policies relating to the structures and curriculum of teacher education programmes and by putting in place strong monitoring and supervision mechanisms. The affiliating and examining bodies can be instrumental in bringing about rigor in the transaction of curriculum by making the evaluation system thorough and rigorous. The R&D institutions like NCERT and SCERTs can contribute by providing constant professional support to the teacher education system through research and development of curricular materials incorporating the latest thinking in the field of education. The TEIs with the help of teacher educators have the responsibility to professionalize the conduct of the programme involving teaching of theory courses, organization of co-curricular activities, mentoring teacher trainees for field work and school experience. The cooperating schools can contribute by providing opportunities for the guided involvement of the trainees in the entire programme of the school.

The concept of teacher education is not restricted to the teachers' initial preparation in teacher education institutions. Instead, it also encompasses teachers' life-long education through formal as well as informal means. In order to fully realize the objectives of teacher education

and to turn out 'professional' teachers, it is imperative to organize professionally both pre-service and in-service education of teachers. In this paper, it is proposed to discuss ways and means to professionalize teachers' pre-service and in-service education separately.

4. Professionalisation of Pre-Service Teacher Education

The strategies for the professionalisation of pre-service teacher education are proposed to be discussed with reference to (i) Policy Perspectives, (ii) R&D support system, (iii) Process Management including School experience and internship, and (iv) Scheme of Evaluation.

However, before discussing the strategies for professionalisation of pre-service teacher education, it would be appropriate to scan the current pre-service teacher education scenario to ascertain the extent to which the elements' of professionalism are present in it.

4.1 Current Scenario

At present, three major teacher programmes, namely, ECE, ETE and STE (B.Ed.) comprise the mainstream system of teacher education in the country. In addition, there are subject specific programmes like B.P.Ed., integrated stage-specific programmes like B.El.Ed. and four year integrated B.Ed. programme of RIEs of NCERT. However, more than 90% institutions offer diploma level programmes in ECE and ETE and one year degree programme in secondary education, that is, B.Ed. These three programmes meant for preparing teachers for different stages of school education, by and large, are organized along similar lines.

The ECE and ETE programmes are of two years' duration and the eligibility qualification for both the programmes is senor secondary (+2). The B.Ed. programme is of one year duration for which the eligibility qualification is the first degree in arts/science/humanities. The three programmes are based on the same model involving separation between general education and pedagogical studies. The students complete their general education in secondary schools or undergraduate colleges and thereafter come to TEIs for training in pedagogy. A majority of teacher education institutions have a grouse that majority of students who join teacher education institutions do not possess adequate knowledge of the subjects they have to teach in schools. Above all, they are not willing to shoulder the responsibility of helping the students to upgrade their content knowledge as they take the position that they should not be called upon to do in one or two years what institutions of general education failed to do in 12-15 years. The present model does not provide for student teachers' concurrent engagement with content and pedagogy.

The current teacher preparation programmes of one year or two years' duration are predominantly devoted to the teaching of a few educational theory and teaching methodology courses. As part of field work or practical experience of teaching in real school situations, the student teachers are

required to observe a few lessons delivered by fellow student teachers and deliver some 30-40 lessons. Only a very few lessons delivered by the trainees are supervised by the teacher educators. In majority of cases, the teacher educators' remarks are casual, generalized and lack substance and specificity.

The duration of B.Ed. programme is one academic year but for all practical purposes its duration is of 6-7 months only as admissions are completed in the month of August or September and final examinations are held in the month of March or April with one or two breaks during the period. Due to the shortage of available time, theory courses are covered hurriedly and the ritual of practice teaching alone in place of comprehensive school experience is preformed. In the circumstances mentioned above, there is hardly any scope for 'professionalism' which demands thoroughness and rigour.

As per the recruitment norms, presently in vogue, persons without school teaching experience are appointed as teacher educators on the strength of their academic and professional qualifications. Their engagement with school children is limited to practice teaching during their B.Ed. training. Since they have to teach 'methods of teaching' only, their own contact with their subject gradually gets weakened and consequently they lose the competence to teach the contents of the subject. They further find it difficult to bring about integration between content and pedagogy.

The scenario presented above indeed presents a grim picture of the teacher education system. However, many teacher education institutions do organize teacher education professionally and because of better management practices and presence of committed and competent teacher educators, they do compensate the weaknesses of the policies and evaluation modalities to some extent.

5. Strategies for Professionalizing Teacher Education

5.1 Reforming Policies

The most important intervention to bring about professionalism in teacher education has to be at the level of policy. A few policy initiatives taken during the past few decades were perceived as the steps towards achieving the goal of professionalisation. Some of the policy initiatives related to upgradation of the eligibility qualification for admission to different teacher education programmes or enhancement in their duration, including, for instance, in the 1950, the eligibility qualification for admission to primary teacher training programme of one year duration was matriculation or class X pass, however, with the introduction of the scheme of District Institute of Education and Training (DIET) in pursuance of the recommendations of NPE (1986), the entry qualification for the elementary teacher education programme and its duration was raised to senior secondary (+2) and 2 years respectively. Subsequently, the decision was

endorsed by the NCTE and the two years elementary teacher education programme with class XII as the entry qualification became the norm in the entire country. However, the duration of the secondary teacher education programme (B.Ed.) could not be raised from the present one year to two years, inspite of repeated recommendations of the non-statutory NCTE. But the eligibility qualification has been raised from mere pass in the degree examination to at least 50% marks either in the Bachelor degree or in the Post-graduation degree.

The NCTE's Curriculum Framework for Quality Teacher Education (1998) recommended B.Ed. programme of 2 years duration but a time bound programme for the switch over from one year to two years could not be implemented. The two year programme was implemented on a pilot basis in a few institutions but the pilot stage never came to an end. The NCTE neither adopted persuasive measures to ensure its countrywide acceptability nor exercised its statutory authority to enforce the change. It continued to grant recognition to one year programme even in new institutions. It is a matter of common sense that when a programme of shorter duration is recognized as equivalent to a programme of longer duration, then the students are bound to prefer the one year programme as it means huge savings for them in terms of time and money. The two year programme increases not only the students' private costs on their training but also makes them to bear the opportunity cost as they lose paid employment for one full year.

There must be sound professional considerations for deciding the duration of a programme like the minimum time required to develop the essential competencies among the trainees. In no case, longer duration should be imposed to make up for the inefficiencies in the organization of the programme of shorter duration. But this was the major consideration for recommending the longer duration, as it has been pointed out time and again, that one year B.Ed. programme generally gets reduced to a programme of 7-8 months' duration. Instead of improving the efficiency of the system, the burden was proposed to be passed on to the students, who belong to the middle or lower middle strata of the society and who can hardly afford the luxury of spending one extra year on their professional preparation and that too without any discernible gains in the professional competencies.

Instead of integrating the education of content with its pedagogy, the two year model attempted to reinforce the isolation between them. The mere inclusion of a few more educational specializations in the curriculum does not make a programme professional. The teacher educators having long association with one year programme rooted for the model as it approximates the existing model with which they are comfortable. On the other hand, the four year integrated model has virtually remained confined to the RIEs of the NCERT, abandoned inspite of its potential for the professionalisation of teacher education and strong policy support since long. The Education Commission (1964-66) noted with concern that

teacher education institutions continue to exist as insular organizations even within the university system where they are located. Recognizing 'quality' as the essence of a programme of teacher education, the commission recommended the introduction of 'integrated courses of general and professional education in universities with greater scope for study and discussion and a comprehensive programme of internship.

Subsequently, the National Commission on Teachers-I (1983-85) reiterated the need to enable the prospective teachers to pursue general and professional education concurrently for which it recommended introduction of an integrated four year programme of teacher education after senior secondary. In view of the enormous costs involved in the setting up of a college offering integrated programme of longer duration, the commission recommended gradual increase in the number of such colleges, and to begin with, one such college should be established in each state.

In the early 1960, four Regional Colleges of Education were set up to organize the integrated programme. The programme has undergone several changes during the past four decades. At present, only B.Sc. B.Ed. programme is running and the programmes for Arts and Commerce students have been discontinued. Several studies have confirmed that the products of the four year programme prove more competent as teachers than the products of the one year programme. But in spite of obvious advantages of the integrated programme, it has not moved beyond the confines of the four RCEs (now RIEs).

The following characteristics of the programme have the potential for professionalizing teacher education:

(i) The undergraduate courses in universities are neither professional courses nor foundation courses for specific professions. After completing the undergraduate course, the students have the option to either pursue post-graduation course or to enter a variety of professions such as teaching, law, accountancy, or public administration. But in the integrated programme, the general education component is so designed that it fully meets the requirement of the teaching profession. At the undergraduate level, in most of the universities, the students are required to study one or two languages and two or three elective courses for the Bachelor's degree. This provision does not adequately prepare students for teaching different subjects of school curriculum. For instance, the social sciences curriculum at the school stage draws its content from disciplines like history, political science, geography and economics. A social sciences teacher in schools is called upon to teach all the four components, even if he/she himself has studied only two social sciences at the graduation level. This means that he/she teaches the other two components of curriculum even without formally

studying them beyond high school level. This is exactly because of this situation that the teachers who had studied history and political science at the graduation level find it difficult to teach the geography and economics components. Same is the case with science teachers who are called upon to teach all the components of science curriculum, namely, physics, chemistry, botany and zoology even if they themselves have studied only two or three sciences at the graduation level. At present, a person can become mathematics teacher on the strength of having studied only one elective course in mathematics, but in the integrated programme, it is possible to include 2-3 elective courses related to different branches of mathematics. Likewise, the study of just one elective course in a language is not enough to make a competent language teacher, for which knowledge of grammar, linguistics and literature of the concerned language is essentially required.

In the integrated programme of four year duration, it is possible to fix the number of elective courses keeping in view the subject(s), a teacher shall be required to teach at different stages of school education. Assuming that a teacher should be able to teach three subjects at the primary stage, two subjects at the upper primary stage and one subject at the secondary stage, the content courses should be organized to meet this requirement. For instance, in the first year, the students of science and humanities streams at the +2 stage may study social science and science subjects respectively. This arrangement shall equip the trainees to teach one language, EVS and mathematics at the primary stage. Likewise, as many elective courses be included in the second and third years of the programme as are required to equip the teachers to teach effectively the required number of subjects at the upper primary and secondary level. In sum, the integrated programme of longer duration makes it possible to organize the general education courses to meet the specific requirements of the teaching profession.

(ii) In the conventional model, the students study content and pedagogy in separate institutions by different faculty members with a time gap of two to three years. As a result of the separation between content and pedagogy, the colleges of education deal with pedagogy in a generalized manner by teaching only 'general' methods of teaching. On the other hand, in the integrated programme the same teacher can teach both content and pedagogy concurrently. For instance, while discussing 'basic features of our Constitution', he/she can also discuss how this topic can be taught to school students, and if possible, he/she can also demonstrate the use of the method he/she has

recommended to the student teachers.

(iii) In the existing programmes of one year or two years' duration, the total field experience or internship period is restricted to forty days in a year. During this period, the student teacher is required to deliver a pre-specified number of lessons, which is invariably less than forty. Needless to say that barring a few honourable exceptions, in most of the teacher education institutions, adhocism prevails in all matters relating to the organization of internship. The inadequate duration and lack of professional rigour and seriousness make the 'internship' a mere ritual which is performed to fulfil the administrative requirements. However, in the integrated programme of four years' duration, it is possible to make provision for the internship of about six months' duration spread over a period of 3-4 years. The internship in a year may be restricted to one sub-stage of school education, such as, ECE, primary, upper primary and secondary.

(iv) At present, only secondary teacher education forms part of the university education system, while the ECE and elementary teacher education programmes are under the purview of state education departments. A number of Commissions and Committees including the Education Commission (1964-66) and Chhattopadhyay Commission (1983) had recommended that the entire system of teacher education needs to be brought to the university system, in order to enhance its prestige and status and to bring about the required rigour in it. Being in the university system, the integrated B.Ed. programme shall have the rigour and status of other university level programmes.

(v) The programme of longer duration helps student teachers to develop commitment towards the teaching profession as instead of exploring other options, they stick to the profession and make efforts for career advancement in the profession itself.

(vi) At the end of class XII, when the students are in a position to make career choices, they have an opportunity to join professional courses like engineering and medicine. Likewise, they should have the opportunity to enter teaching profession after class XII and to pursue a degree course in teacher education for a period of four years. Instead of being a dual degree programme (B.A. B.Ed. or B.Sc. B.Ed.), it should be a single composite degree programme leading to B.Ed. degree. This means that the students shall not have the exit option after the completion of the first part of the dual degree programme.

The integrated model of teacher preparation after +2 should aim at preparing teachers for the elementary as well as secondary stage of school education, that is, from pre-school to Class X. A separate model of teacher education is required for preparing teachers for senior secondary stage,

that is, Class XI-XII. The teaching at this stage is based on the concept of disciplines and demands higher level of specialisation on the part of teachers. The teachers at this stage must possess Master's degree in their respective subjects. The experience of past decades suggests that postgraduate education is generally better imparted in the university teaching departments. In our country, the diversification of curriculum begins in class XI, where, in addition to the core courses, the students are required to choose 3-4 courses out of the long list of prescribed elective courses, the number of which in many Boards of Education exceeds 30. The integrated model of teacher preparation for the senior secondary stage does not appear to be feasible as it is extremely difficult for a college of education to organize post-graduate education in ten to fifteen subjects. Therefore, one year B.Ed. programme with post-graduation as the entry qualification appears to be the only viable alternative model for the preparation of senior secondary school teachers. The products of this programme shall also be eligible to teach secondary classes, that is, classes IX-X. A secondary teacher education college may be required to admit students subject-wise for at least 8-10 subjects. A student may be required to study the teaching of one major subject and one subsidiary subject for the senior secondary and secondary stages respectively. The NCTE shall have to develop separate Curriculum Framework as well as Norms and Standards for the senior secondary teacher education programme.

5.2 Curriculum Framework

After taking the policy decision regarding the switch over to the four year integrated model, the next policy intervention obviously is the preparation of model curriculum framework which spells out the objectives of the programme, the school stages for which teachers are to be prepared, year-wise course work, suggested strategies for achieving integration between content and pedagogy and guidelines for the organization of internship and student evaluation. The NCTE has the experience of developing Curriculum Framework for the one year programme but it shall have to break new ground for the preparation of a Curriculum Framework for the four year integrated programme.

5.3 Norms and Standards

The NCTE has the responsibility to lay down norms and standards for the recognition of various programmes. The norms generally spell out the requirement of staff and infrastructural facilities for the effective organization of the programme. In addition to the input norms, the NCTE should also lay down process norms which should provide guidelines for the organization and management of the programme. The NCTE should further evolve a system of monitoring and supervision of the Teacher

Education Institutions by using the process norms as the evaluation criteria.

The process norms should spell out the processes involved in the transaction of theory courses, organization of pre-internship activities in the teacher education institution, organization of internship in real school situations and preparation of student teachers for the organization of co-curricular activities in schools.

5.4 Process Management

The policy initiatives taken by the NCTE at the central level such as prescription of models for the organization of teacher education programmes, preparation of curriculum frameworks and Norms and Standards for different programmes are not the sufficient conditions for the professionalisation of teacher education, though these provide the necessary guidelines to the teacher education institutions. The major responsibility for the professionalisation of teacher education rests with the Teacher Education Institutions and with the teacher educators. The processes organized by institutions should be such as lead to the preparation of professional teachers possessing the attributes discussed in an earlier section. For example, while teaching 'Emotions' in a theory course the teacher educator may encourage the students to reflect on their own or that of their peers or their students' style of expressing and managing different emotions. This should lead to the development of their own theories or viewpoints about emotions and their management. Instead of mere reproducing the textual material in classrooms, the focus should be on enabling the students to reflect on the textual material vis-à-vis their personal experiences and observations. While organizing co-curricular activities, the student teachers may be encouraged to debate current affairs, specially issues relating to education and express their personal views which may be contested by their peers. During the internship, the student teachers may be encouraged to present the subject matter in such a way that the students begin to question the 'given' knowledge.

5.5 Evaluation

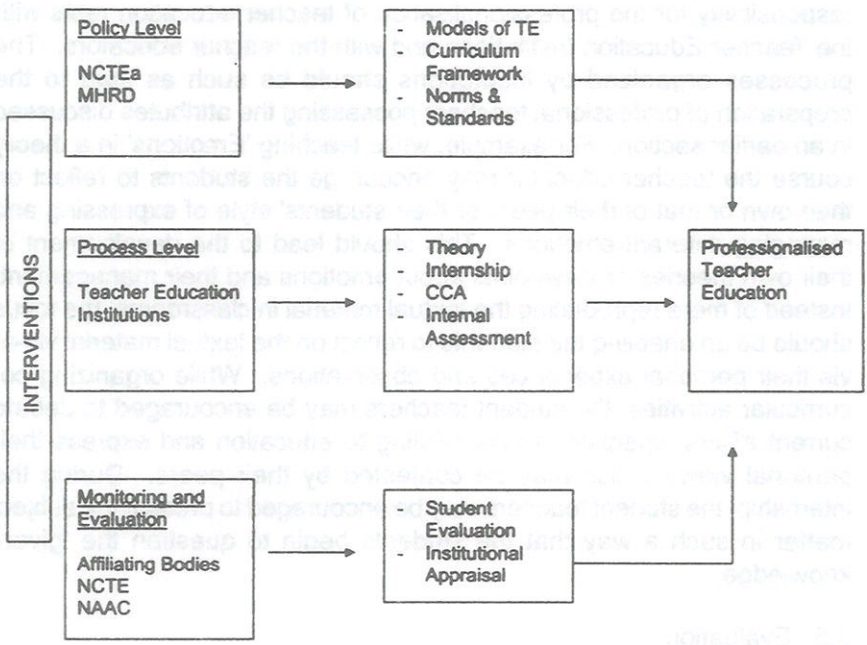
The evaluation scheme prescribed by the affiliating bodies determines the modality of curriculum transaction in the institutions. The rigorous scheme of evaluation makes curriculum transaction systematic and geared to the realization of curricular objectives. The students will have to undertake projects or research studies if these form part of the evaluation scheme. The teachers have a tendency to reorient their teaching to the demands of the questions included in the question papers. The questions expecting a simple narration of events or reproduction of the subject matter will not stimulate the students for original thinking or to write answers based on their personal observations and experiences. If the question papers include questions asking the students to examine or analyze certain

situations, happenings or developments from different perspectives, then the teachers are obliged to alter their teaching style to provide opportunities to the students to practise answering such questions.

In sum, the policy making bodies, teacher education institutions and examining bodies have mutually reinforcing roles for the professionalisation of teacher education. While the responsibility for professionalizing the process of teacher education is that of the teacher education institutions but they have to function within the limits of the teacher education policy on the one hand, and those of the evaluation system, on the other.

The role of different agencies to achieve the goal of professionalisation of pre-service teacher education can be presented diagrammatically as follows:

Professionalisation of Pre-Service Teacher Education



6. In-Service Teacher Education

The importance of teachers' in-service education as a powerful instrument of teachers' continuing professional development can hardly be exaggerated. A number of Commissions and Committees on education appointed by Government of India from time to time unequivocally lent their support to the idea of teachers' in-service education as an essential reform strategy in the field of education. However, no useful purpose will be served by reproducing their recommendations here as there is hardly any doubt anywhere about the desirability and usefulness of teachers' in-service education. But, it is indeed unfortunate that inspite of unequivocal

policy support, teachers' in-service education, has, by and large, remained a sporadic, unplanned and ad-hoc activity.

The first major critique of the status of in-service education, attempted by the National Commission on Teachers-I (1983), highlighted the absence of a clear-cut policy for in-service education and adhocism in its organization without advance planning on the basis of systematic identification of training needs. The commission recommended adoption of a six-step model of INSET, comprising: (i) Selection of major theme, (ii) identification of knowledge, skills and attitudes to be developed, (iii) selection of faculty, (iv) preparation of course material, (v) training and (vi) evaluation. It further recommended that every teacher should be provided an opportunity to undergo in-service education of three weeks' duration once in five years of service as a prescribed requirement for the grant of senior scale or promotion to senior positions. The National Policy on Education (1986), a major landmark in the growth of teachers' in-service education, not only recognized complementarily between pre-service and in-service components of teacher preparation but also highlighted the need for creating new structures and strengthening the existing ones to institutionalize teachers' in-service education.

In pursuance of the recommendations of NPE (1986) and its PoA, the Government of India formulated and implemented the scheme of 'Restructuring and Re-organization of Teacher Education', beginning from the 7th five year plan. As a result of this scheme, a training network comprising District Institutes of Education (DIETs), Colleges of Teacher Education (CTEs), Institutes of Advanced Studies in Education (IASEs), Block Resource Centres (BRCs) and Cluster Resource Centres (CRCs) has been established in the country. These institutions are required to continually organize teachers' in-service education but several studies have indicated that they have predominantly remained engaged with pre-service teacher education and their engagement with in-service education has been minimal, sporadic and unsystematic. The current scenario of teachers' in-service education in the country is summarized below:

(i) The teachers' in-service education in majority of states has remained tied to the availability of Central assistance. The states, by and large, make meagre provision for it in their budgets.

(ii) In spite of the frequent articulation of the need and importance of in-service education, the details of a formal training policy have not been worked out yet, that is, no policy has been formally adopted with regard to duration of training, time interval between two training cycles in respect of an individual teacher, incentives and disincentives for participation or non-participation, and also about the content, process, monitoring and evaluation of training.

(iii) The in-service education, by and large, has been characterized by adhocism as it has been neither institutionalized nor professionalized. Its organization is seldom preceded by

systematic assessment of training needs of the target group, preparation of training design and course material on the basis of identified training needs and organization of training in a professional manner.

Teachers' in-service education, so far, has been organized as part of some scheme or project like Extension Services Departments in training colleges, Centres of Continuing Education, (CCEs) Programme of Mass Orientation of School Teachers (PMOST), Special Orientation Programme for Teachers (SOPT), DPEP, SSA, etc. The educational system has not yet internalized it as an essential component of the implementation strategy of school curriculum independent of a project or scheme.

The National Council for Teacher Education (NCTE), the statutory body set up to regulate the system of teacher education in the country, has mostly remained pre-occupied with the pre-service teacher education programmes, and, therefore, it has not so far initiated concerted efforts to evolve a policy appropriate for the in-service education of teachers. The Curriculum Framework for Teacher Education brought out by NCTE in 1998 includes a small section on In-service education which does not go beyond generalities and does not constitute a policy statement alongwith an implementable action plan to impart in-service education to all teachers periodically at regular intervals.

The policy for teachers' in-service education must provide details about the nature content and quantum of training a teacher should receive during the entire span of his professional career. The incentives for participation and disincentives for non-participation in the in-service education need to be mentioned in the INSET policy. The policy statement should also include necessary details of the delivery mechanism alongwith roles of different institutions and agencies for teachers' in-service education.

7. Professionalisation of In-service Education

The formulation of in-service education policy and operationalisation of the training network in the country may ensure that something starts happening in the field of teachers' in-service education but it does not ensure the desired returns if it is not perceived as a 'discipline' and its organization is not 'professionalised', that is, casualness and adhocism in its organization must be replaced by rigour and seriousness in its planning as well as in execution. In order to bring about 'professionalism' in the organization of INSET, the following are absolutely essential:

7.1 Development of Training Curriculum

The organization of training, short-term or long-term, must be preceded by preparation of curriculum to be transacted during training. The training curriculum ought to be based on the (i) identified training

needs of the prospective trainees and (ii) contemporary needs of the profession. What is a training need? A need is a discrepancy or deficiency between what is and what ought to be. Therefore, training need exists when a worker lacks the requisite knowledge, skills or attitudes to perform an assigned task optimally. This implies that there are standards of performance of a task against which the performance of an individual is judged. Explaining to the students the phenomenon of the occurrence of lunar or solar eclipse and formation of day and night are the training needs of teachers, if majority of them find it difficult to explain these phenomena in their classes. Likewise, teaching in multi-grade situations is a training need of teachers if they find it difficult to teach different subjects simultaneously in more than one class. The contemporary needs of the profession may not be related to the deficiencies in knowledge of subjects taught in school but may be related to the latest developments in the profession or in the pedagogy of different disciplines. The changing emphases or priorities in education shall necessitate teachers' re-orientation or retraining. For example, emphasis on 'critical reflection' or 'construction of knowledge by students' as objectives of education should lead to the development of such training strategies as shall enable the teachers to prepare their students for reflection and construction of knowledge.

The training needs of all the teachers of a particular stage or a grade or a subject cannot be the same in different parts of the country or even in different regions of the same state because of variations in the socio-economic and cultural contexts in which teachers have to work. Even a well defined sub-group of teachers within a state or a region may have several heterogeneities, based on their age, academic qualifications, length of teaching experience, etc. Therefore, in order to make the training relevant and context specific, the organizers shall have to study the strengths and weaknesses of the sub-group of teachers before inviting them to attend training at their training centre. In other words, the specific training needs of the invited sub-group should also be included in the training curriculum in addition to the general needs identified at the macro level for the entire group of teachers.

7.2 Preparation of Course Material

Before the organization of face-to-face interaction with teachers, it is necessary to provide them specially prepared course material for self study, reflection and validation against their personal experiences and observations. The self-study material must be interactive, that is, it should be in the form of a dialogue between the author and the readers. It should have the potential to help the readers to go beyond the mere acquisition of information or comprehension of concepts, but to critically examine and re-interpret the given information. In addition to the print material, suitable video material developed by professional organizations should be extensively used during teachers' in-service education.

7.3 Resource Faculty

The 'core' faculty in the in-service training institute should be encouraged to specialize in some of the areas included in the 'training curriculum' or in the course material. The guest faculty identified for the remaining themes must be provided an opportunity to interact with the core faculty on the conceptualization and transaction of training curriculum and also to go through the self-study material and to preview the video programmes identified for use during training.

7.4 Organization of Training

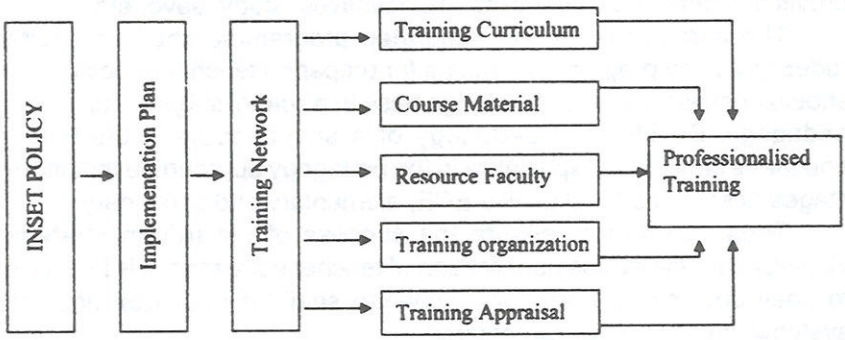
Professionalisation of teachers' in-service education depends on the way it is actually organized in the training institution. At many places, in-service education programmes of short duration (3-4 days) are organized in an ad-hoc manner without formal preparation of training curriculum and material. Sometimes, the identification of resource faculty precedes finalization of the training curriculum. But, ideally the guest faculty should be prepared before hand to transact only that curriculum which has been conceptualized on the basis of systematic assessment of teachers' training needs. Some part of the curriculum may be earmarked for transaction through teleconferencing. In addition, the trainees should be required to undertake and complete some projects/assignments at their work places. Thus, the training strategy should comprise self-study at home, face to face interaction at the training centre, on-site completion of projects and assignments, and finally, interaction through teleconferencing mode. It is necessary that every step of the training process and any part thereof is characterized by 'professionalism'. For example, during the face to face contact programme, the organizers must adhere to the principles of 'andragogy' and, therefore, must encourage dialogue and discussion in place of mere transmission of information. The case studies of effective classroom or school practices may form the basis for interactive dialogue leading to relevant generalizations.

7.5 Appraisal of Training

The in-service training strategy must have in-built provision for its systematic appraisal, which, in turn, should form the basis for the renewal of training curriculum and revision of course material. Efforts should also be made to ascertain the extent to which the teachers' training gains are reflected in the classroom processes organized by them. This also helps in the revision of curriculum and transaction modalities for future programmes.

The appraisal of training may be the end point of a training cycle but it also marks the beginning of the next cycle as the findings of the appraisal may indicate some of the training needs of teachers, which may necessitate modification in the course design.

Professionalisation of In-service Education



In sum, professionalisation of teachers' in-service education requires formulation of a well thought out, realistic and implementable INSET policy which should be implemented by the central government in collaboration with the state governments. A comprehensive Plan of Action shall have to be evolved to impart training of a pre-specified duration to all teachers through different modes in every training cycle. The standing training network for teachers' INSET, already established, needs to be further strengthened to meet the challenge of increasing number of teachers. But, it is the professionalised organization of INSET, which matters most to ensure the desired returns from the investments made on the establishment of institutions, deployment of faculty and organization of training. The Professionalisation of In-service Education can be presented diagrammatically as follows:

7.6 Management of Change

Professionalisation of Teacher Education, both pre-service and in-service, depends on internal as well as external factors. The internal factors, that is, the interventions required within the system of teacher education at different levels have been discussed at length in the present paper. However, these interventions, even if implemented faithfully and meticulously, will not yield the desired results, if they are not accompanied by necessary interventions in the larger system of education in general and school education in particular. There have been instances where even well thought out reform strategies and well conceptualized innovative programmes failed to make a mark in the absence of necessary modifications in the recruitment rules of state governments or those of central organizations responsible for running schools. The introduction of integrated B.Ed. programmes and one year B.Ed. programme exclusively for senior secondary stage shall necessitate appropriate changes both in the regulations of the universities and in the recruitment rules of departments and organizations dealing with schools. The smooth implementation of the teachers' in-service education policy may necessitate suitable amendments in the Education Acts/Codes of the States and

corresponding changes in the service conditions of teachers involving provisions relating to incentives, disincentives, study leave, etc.

The introduction of the integrated programme shall necessitate redesigning the programmes meant for preparing teacher educators who should possess a sound knowledge base in a school subject alongwith its pedagogy. Besides the pedagogy of a school subject, the teacher educators should also specialize in the pedagogy appropriate for different stages of school education like ECE, elementary and secondary.

Thus, in order to ensure the success of the reform strategies visualized for the professionalisation of teacher education, it is imperative to spell out how the envisaged change shall be managed and what systemic changes shall be required.

8. Conclusion

The present day teacher education, specially the way it is organized in pre-service and in-service education institutions, hardly leads to preparation and development of teachers as 'professionals'. In order to realize this objective, it is imperative to 'professionalize' teacher education for which 'professionalism' needs to be instilled in each and every phase of its organization starting with conceptualization and ending with evaluation and appraisal. A large number of institutions and departments such as MHRD, NCTE, NCERT, Universities SCERTs, State Education Departments and School Organizations have to work in tandem to mutually reinforce each others' efforts towards 'professionalisation' of teacher education.

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Chapter 13

Preparation of Teacher Educators

C. SESHADRI

1. Introduction

India has one of the world's largest teacher training systems with more than 50,000 teacher educators, a 'guesstimate' based on the number of Teacher Education Institutions (TEIs) engaged in the business of 'teacher educating' at the pre-school, elementary, secondary and higher levels of education. There are 7,600 recognized institutions engaged in the training of teachers. These include pre-school, elementary and secondary TEIs and university departments of education. There are also institutions for training teachers in special education, physical education and adult and non-formal education. Teachers are also being trained through distance education in open universities and correspondence courses. There has been virtually an explosion in the number of TEIs especially at the elementary and secondary levels during the past 4-5 years with the numbers rising from 3,489 courses, 3,199 institutions and intake of 2,74,072 in 2004 to a whopping 9,486 courses and 7,597 institutions with an intake of 7,33,729 in 2007 (NCTE, 2006-07). This expansion has, understandably, taken a heavy toll of quality parameters like infrastructure, faculty and student profile.

The term 'teacher educator' in the Indian parlance brings under its fold a variety of educational personnel concerned directly or indirectly with the education and training of teachers and with research, development and extension activities in school education. In its sweep, it encompasses teacher educators at all levels of schooling including special education and physical education and faculty in the university departments of education and educational Research and Development (R&D) establishments. What engages them all is not one unitary and integrated type of activity but an amorphous package of functions – teaching, research, guidance, extension, materials development and what you have.

This omnibus connotation makes it virtually impossible to conceptualize the nature, scope and functions of teacher education as a uniform and homogeneous profession. It has even been suggested that 'teacher educator' has little or no international stability as it is viewed in too undifferentiated a manner with respect to academic responsibilities, institutional roles and professional status (Raina, 1995).

Notwithstanding the welter of roles and functions, the central use of the term refers to those members of the education profession who are primarily concerned with the training of teachers for different levels of formal schooling in institutions set up for the purpose. This paper is concerned with this dominant group although incidental references may be made to others working in peripheral areas of educational research and materials development in universities and R&D establishments. The object of this paper is to critically enquire into the role perceptions of teacher educators and their education and training with reference to objectives, content, programmes and institutional arrangements.

2. Need for Professionally Qualified Teacher Educators

It is obvious that the education and training of a prospective teacher will be effective to the extent that it has been delivered by teacher educators who are competent and professionally equipped for the job. The quality of pedagogical inputs in teacher education programmes and the manner in which they are transacted to realize their intended objectives depend largely on the professional competence of teacher educators. It follows that if the teacher education system is to efficiently serve its mandate of supplying qualified and capable teachers to the schools, it needs to be managed by competent and professionally qualified teacher educators.

However, a perception that anyone can teach and no particular professional training is required for one to become a teacher is propagated in the media and among officialdom (Note on School Education by the National Knowledge Commission). This coupled with resource constraints has led to large scale recruitment of unqualified and under-qualified persons as "para teachers" in the formal school system. Such informalization of teachers' employment poses a serious challenge to the institution of the professional teacher. An attitude of resignation towards initial teacher education and piecemeal in-service training courses have become an integral part of state provisioning for elementary education. These trends have led to further degradation of the status of school teachers and diluted the identity of teacher as a professional. This situation should not be allowed to draw the attention away from the need for proper formal training of those seeking to become teachers.

The need and importance of professionally trained teacher educators has been underscored in statements on educational policy time and again but the situation on the ground remains grim; there is a severe shortage of properly qualified and professionally trained teacher educators at all

stages of education and especially at the elementary stage. The shortage refers to both inadequacy of required numbers to run the programme as well as to mismatch in the qualifications of teacher educators and their job requirements. As to numbers, a substantial number of the new B.Ed. Colleges fail to fulfil the national norms of 8 teacher educators including the principal for 100 students (Teacher Pupil Ratio of 1:12.5). M.Ed. being the crucial qualification requirement, there do not exist sufficient number of M.Ed. producing institutions (university departments of education and colleges) to meet the demand even of existing institutions not to speak of new institutions. To get over the difficulty compromises are made in the qualification requirement of secondary teacher educators like the making of M.Ed. a desirable (and not an essential) qualification. More serious, however, is the mismatch in the qualifications of teacher educators and the professional tasks they are expected to carry out. It is usually the case that primary teachers are trained by teacher educators with no special qualifications or experience in elementary education. Secondary school teachers are trained by M.Ed. qualified teacher educators but M.Ed. lacks specificity as a programme of preparing teacher educators. Also, the view of professional preparation of teachers as a hierarchically arranged one (with B.Eds. training elementary teachers and M.Eds. training secondary teachers) makes the whole programme ineffective. Teacher education programmes to be effective need stage-specific curricular inputs transacted by appropriately qualified and trained teacher educators. From this angle, the teacher education system needs a strong force of professionally qualified teacher educators.

3. Existing Arrangements for Training of Teacher Educators – Status and Critique

Early Childhood Care and Education (ECCE)/Pre-school

Existing arrangements and programmes for providing Early Childhood Education (ECE) cover a wide range – Integrated Child Development Services (ICDS), ECE Centres, Balwadis and Day Care Centres run by voluntary organizations, pre-primary schools run by governmental and Non-Governmental Organisations (NGOs), Montessori, Kindergarten and Nursery schools and maternal and child health services through primary health centres. The provisions are distributed among government, private and NGO sectors with government intervention largely confined to ICDS.

The training scene in ECE demonstrates a wide range and variety of programmes varying in duration from 3 months to 2 years. They include both in-service and pre-service programmes and programmes offered through distance education [like the Indira Gandhi National Open University (IGNOU) initiative]

There are three types of courses for initial pre-school teacher training: One-year B.Ed. Nursery course offered by the Jamia Millia Islamia, New Delhi, two-year diploma/certificate courses and one-year diploma/certificate

courses. These courses carry names like DPPTE, ECE, ECCE, NTT, PPTC and PPTTC. Other programmes include Anganwadi Sewikas' training (para-professional) under the ICDS, Balsevika training of Indian Council for Child Welfare (ICCW), Montessori training (Association of Montessori International), integrated pre-primary and primary teacher training (Delhi). The NCTE norms stipulate pass in class XII with not less than 50% marks for admission to pre-school training institutions. The programme leads to Certificate in Education (C.Ed). In 2006, the number of pre-school training institutions recognized by the NCTE was 189 with an intake of 9278 (Annual Report).

ECE aims at total child development in a learning environment that is joyful, child-centred, play-and-activity-based. Teacher education programmes in ECE should develop in the trainee concepts, competencies, attitudes and skills related to implementation of developmentally appropriate curriculum based on child-centred and play-and-activity-based approach, cognitive and language development, health and nutrition, social and emotional development, physical and psychomotor development, aesthetic development, creativity and play, programme planning and school organization, community mobilization and participation.

These requirements call for a teacher educator who has a sound knowledge of educational philosophy of ECE besides specialized content and methodology skills pertaining to the above areas. Curricular transaction at this level call for adoption of participatory and self-learning methods; use of audio-visual aids and field visits and excursions, teaching-learning materials like stories and games; skills in doll making, toy making and picture making, observation of children's health and nutrition, case study, continuous and comprehensive evaluation of trainees' performance. The academic and professional qualifications required for teacher educators as per NCTE norms are graduate with diploma or certificate in pre-school teacher education or graduate with Psychology/B.Sc. (Home Science) with specialization in child development, with candidates having B.Ed. (Nursery) degree of 2 years duration getting a special advantage.

However, in view of pre-school education being largely a voluntary and informal sphere of activity, these norms are rarely, if at all, observed in practice. In a study of 88 nursery TEIs, it was found that in most institutions, the teachers were not appropriately qualified in training nursery teachers; they possessed Master's degree in a school subject and B.Ed. Also, the problem of training of trainers has not been addressed with any seriousness. Recent inclusion of pre-school education in Article 45 of the Directive Principles of the Indian Constitution has made it the responsibility of the government to take care of pre-school education and this development may trigger fresh initiatives towards addressing the problem of training of trainers in this area.

The diversity that characterizes the ECE situation calls for development of multiple models of training of workforce with reference to age groups, nature of programme, level of staff and mode and location of

training. Available institutional arrangements for pre-school teacher education are grossly inadequate considering the expected expansion of pre-school education sector in the coming years. Also there is need to evolve specially designed programmes at the degree and post-degree levels for the training of teacher educators. One possibility is to develop the M.Ed. as a teacher educator training programme with specialization in pre-school/elementary/secondary teacher education.

Primary/Elementary

Free and compulsory elementary education (6-14 years) is the fundamental right of every child. The aim of elementary education is to fulfil the basic learning needs of all children in an inclusive school environment bridging social and gender gaps with the active participation of the community. Elementary education should enable the child to develop skills of literacy, numeracy, communication and problem solving, knowledge and understanding of the physical and social world around and attitudes and skills related to enhancing productivity and quality of life. The elementary stage marks the beginning of formal introduction of the child to the 3 R's gradually moving on to the study of the disciplines. It should provide for a learning environment that promotes joyful, activity-based and participatory teaching and learning.

The elementary teacher education programme carries a welter of nomenclatures like BTC, D.Ed., TTC, BTC, TCH and so on. Both the duration of training and entry qualifications differ across states. The course is offered in ETE institutions and in DIETs. Elementary teacher education aims at preparing teachers for primary (I-V) and upper primary (VI-VIII) levels of education. The dominant programmes are: one-year certificate/ diploma, two-year diploma/certificate. There is also a four-year degree programme (B.El.Ed.) offered by Delhi University. The curriculum of ETE usually covers educational foundations, methodology of teaching different school subjects, health and physical education, art, work experience, music, ICT and practice teaching.

More than 40 years ago, the profile of elementary teacher educators was described by the Education Commission (1964-66) in these words: "The majority of the staff is recruited from among the secondary school staff; they are trained to work at the secondary stage and are not adequately prepared to train primary teachers; their pay scales correspond to secondary school teachers; good secondary school teachers are not prepared to work in training institutions due to loss of private tuition and increased workload; some of the staff is drawn from the inspectorate but good inspecting officers with prospects are not attracted". But there is no good reason to believe that the overall picture has changed much during the part four decades.

The NCTE norms prescribe M.Ed./M.A. Education with either B.Ed. or B.El.Ed. or Master's degree in any subject with either D.Ed. or B.El.Ed. with 55% marks for the teacher educator (lecturer). In practice, however,

teacher educators in ETE institutions do not possess appropriate stage-specific professional training or experience. They are usually of the rank of high school teachers with a college degree and B.Ed.

With the establishment of the high profile DIETs, two categories of teacher educators at the elementary level have emerged –those who teach in DIETs and others who teach in other training institutes, government or private. In most states, DIETs are the main supply institutions for elementary teachers (however, this situation has changed with the large scale proliferation of private ETE institutions over the past five years). There are 556 DIETs sanctioned, of which 466 are functional (WG Report on Elementary Education and Literacy, XI Five Year Plan 2007-12).

The DIET functions – pre-service and in-service teacher training, non-formal and adult education workers, curriculum and materials development, educational research, extension, planning and management – call for high level of competencies and skills especially in educational planning, management, research and technology. Presently, DIETs find themselves totally under-equipped in required faculty capabilities; the faculty appointed do not possess the required academic qualifications or professional experience. Many of them do not possess basic experience in primary school teaching, insights into primary education problems and professional skills in teacher training and research. Teacher educators in non-DIET institutions share these shortcomings, especially lack of stage-specific primary teacher training.

Initial training of elementary teachers suffers from isolation, a low profile and poor visibility in view of its being a non-degree programme administered by a government department (like SCERT) as one among its other concerns (It is observed that India is one of the few countries in the world where elementary school teachers do not require a university qualification). The special significance of initial primary teacher education (especially in the context of elementary education being declared a fundamental right) is overlooked and its concerns are subsumed under general problems. The curriculum frameworks thus far developed provide guidelines that are too general and do not address the stage-specific training needs of elementary teachers. The Curriculum Framework for Quality Teacher Education (1998) and Approach Paper for Elementary Teacher Education Curriculum Renewal (2003) by NCTE are happy exceptions. The establishment of DIETs has been the most important development in bringing the issue of elementary teacher education to the centre stage.

The basic orientation of initial training of elementary teachers should be transformed towards frontline national concerns like access, drop-out, participation, achievement, gender, teaching in difficult contexts. This calls for participatory curriculum planning involving all stakeholders, modular organization of curriculum in terms of tasks integrating relevant theory, de-emphasizing theory for its own sake, greater curriculum time for skill learning and practice, a professional approach to training strategies and

development of materials and application of relevant educational technology in training processes. The system as of now severely lacks teacher educators trained in carrying out such tasks. Apart from isolated efforts of some universities, there exist no programmes for professional preparation of elementary teacher educators. Neither B.Ed. nor M.Ed. in their present form equips prospective teacher educators with the required skills to carry out the tasks specific to elementary stage of education.

Secondary

Teacher preparation course for secondary education generally known as B.Ed. is a one-year professional course that prepares teachers for upper primary/middle level classes (VI-VIII), secondary classes (IX-X) and senior secondary classes (XI-XII). There are also 2-year and 4-year training programmes offered in selected universities and colleges. These are, however, marginal experiments.

The B.Ed. programme is offered in Colleges of Education and University Departments of Education. The programme is also offered through centres of distance education/open universities. B.Ed. is also offered with specializations, for example, child development, home science, science, English, Hindi, Sanskrit, etc. There has been a proliferation of B.Ed. colleges and courses over the past few years triggered by market factors, their total number as on March 2007 being 4,034 with an approved intake of 4,16,472 (NCTE 2006-2007). The curriculum covers educational foundations, pedagogy of school subjects, practice teaching/internship and optional papers in different specializations like action research, guidance and counselling, population education, inclusive education and computer education.

Secondary teacher education got a major boost with the elevation of selected institutions as Colleges of Teacher Education and Institutes of Advanced Studies in Education under the centrally sponsored scheme of strengthening teacher education. The CTE/IASE guidelines particularly focussed on the need for recruiting persons with high academic and professional qualifications on par with those obtaining at the general arts and science colleges and universities as per university norms. There are 104 CTEs and 31 IASEs functioning in the country (*WG Report*). The scheme envisaged both short-term and long-term selection procedures for recruiting only persons of outstanding ability and record. It also indicated the creation of a separate cadre of teacher educators, parity in pay scales with the general colleges, financial incentives for outstanding performance and promotional avenues.

In practice, the typical secondary teacher educator is a graduate with a post-graduate degree in education. The NCTE norms prescribe a Master's degree with M.Ed. or B.Ed. having 55% marks with Ph.D./M.Phil. carrying special weightage. Although M.Ed. is generally accepted as the requirement for one to become a teacher educator, the programme as offered in most universities is simply an extension of B.Ed., seriously

lacking in inputs focussed on the preparation of teacher educators, secondary or elementary.

By way of summing up, we may note that at all stages TEIs are managed by faculty with little or grossly inadequate professional training to handle the tasks of a teacher educator. The absence in the system of institutions and programmes focused on the professional preparation of trainers/teacher educators for different stages of education accounts for the situation. With the mushrooming of TEIs over the years, the situation has become critical as the supply of teacher educators has not kept up with the increasing demand for faculty and institutions have compromised faculty requirements with reference to both qualifications and number.

4. Education of Teacher Educators – Basic Issues

4.1 Teacher Educator as one would wish to see

Many are the desired attributes of a good teacher educator. The normal expectations are that the teacher educator would be a scholar in a chosen knowledge field, possess pedagogical competence, be ICT savvy, possess understanding of the conceptual complexities of school curriculum and capability of demonstrating teaching behaviour that he/she expects from student teachers and be a reflective academic practitioner.

Understandably, there are differing perceptions of the role of teacher educator. While many would confine it to academic responsibilities having to do with the preparation of good classroom teachers, some would like to assign teacher educators a more activist role which would take them out into the thick of societal problems. Taking the position that teacher educators must assume leadership roles for which they presently lack the necessary motivation, aptitude and competence, the NPE Review Committee (1990) listed the following 'shoulds' for a teacher educator:

- Be a school teacher and have experience of the school system.
- Have high academic competence.
- Have competence in educational research.
- Have concern for the underprivileged.
- Have broader understanding of the Indian society, an integrated view of knowledge and the interventionist role of education.
- Have personality attributes like ability to think and work with a sense of independence, to act against populist opinion, to convince and catalyze people, to lead them for creative and sustained action, to mobilize resources and work with different segments of society.
- Have high motivation for need achievement and high interpersonal skills.

Toward the end of producing such a person, the Committee recommended that the teacher educator be given a leadership role in educational policy making, strategy formulation, implementation and

monitoring and that a specially designed training programme be organized to develop all these attributes

More recently, the NCTE in its discussion document Curriculum Framework for Quality Teacher Education (1998) envisaged the following profile of the teacher educator. The teacher educator will:

- be socially aware and conscious.
- possess the ability to reconstruct educational experiences.
- understand the impact of society on education and vice versa.
- understand the forces and factors affecting the educational system.
- be able to remove isolation of teacher education.
- possess knowledge, skills and competencies necessary for teacher education.
- be able to undertake meaningful research in education.
- be able to develop relevant pedagogy.
- be able to train teachers to use relevant educational technology.
- be able to undertake new experiments in teacher education.

Again these are only expectations. They have understandably been criticized as highly idealistic; no one person can satisfy these criteria and no one programme can achieve this; it would be the consequence of one's whole education, personality and motivation (Mehrotra, "Context" in Fifty Years of Teacher Education in India, p.31) The reality tells a totally different story. Generally speaking, the academic profile of the teacher educator irrespective of the stage at which one is operating leaves a great deal to be desired. With specific reference to the length of academic education prior to professional training and its nature (arts, science, languages), level of performance, duration of professional training and the extent of professional knowledge and skills acquired the typical teacher educator does not possess a profile that enables her/him to handle the task of educating teachers with confidence and assurance. The on-the-ground scenario bears this out. A more realistic assessment of the teacher educator's position in the general educational system has to take note of the generally poor motivation and academic profile of entrants, service conditions, promotional opportunities, career path, remuneration package and conditions at the workplace. In relation to all these, teacher educators are an aggrieved lot.

4.2 Profile of Teacher Educators

It is difficult to draw generalizations about the profile of teacher educators, academic or otherwise, for want of adequate research-based knowledge. Compared to research on schools and teachers, research on teacher education institutions and teacher educators is very limited in India as in other countries, UK, for example. One has to construct the teacher educators' profile on the basis of whatever has been said and written about them and practical experience of working with them. NCTE's

Profile of Teacher Educators (1999) seeks to present a comprehensive profile of teacher educators but the survey sample being too small (327 drawn from 24 states in the country!), the findings are of little value in arriving at a general picture.

Like elsewhere in the world, teacher educators in India too cannot lay claim to high academic status and accompanying high profile. In an illuminating study Teacher Educators in India: In Search of an Identity, Raina has observed that teacher training institutions and teacher educators enjoy no political visibility unlike schools; there is no well formulated and planned policy for the recruitment of teacher educators; the field attracts generally mediocre individuals who have drifted to the field without specific motive or preparation; their professional productivity and research capabilities are very limited; their academic life is almost bankrupt and they show tremendous resistance to change. Strong words indeed! But the truth they contain cannot be wished away. The profile of teacher educators (like that of other professionals) is not constant, but subject to change. The current overall decline in quality and standards that has affected practically all stages and areas of professional and general education has hit teacher education too.

Teacher educators especially (perhaps, unfairly) have come under flak for not practicing what they preach. Critics say that when there is a change in the course structure and the nature of inputs, a corresponding shift in training practices is expected, but teacher educators continue to remain good at imparting knowledge centred round conventional approach (Khader 2008). For example, while dealing with discovery learning, enquiry or problem solving, they often fail to illustrate or demonstrate how they are to be conducted. Instead, they deliver discourses on them. They fail to draw attention to the importance of showing how theory works in concrete situations especially in a professional development programme. If teacher educators are to be effective in supporting the transformation of teachers they too must undergo shifts in their knowledge, belief and habits of practice that are akin to transformation than to tinkering around the edges of their practice (Stein, Smith and Silver, 1999, quoted in Khader). They need to know how teachers learn within organizations and through interactions with others. They need not only to access a variety of strategies but also to have the ability to gauge which strategy will be the most effective with a given set of teachers in a given setting. Obviously, teacher educators need to shift out of their comfort zones and finetune their mindset and practice and set in motion the change process for professional development.

The point is that teacher educators bear the cross of belonging to a 'profession' where it is extremely difficult to meet the stringent criteria of a profession. A profession is normally characterized by a long duration programme of academic learning, an organized body of knowledge on which the undertaking is based, an appropriate duration of formal and rigorous professional training preceding practice and a code of professional

ethics that binds its members into a fraternity. While these criteria appear to have been met by teacher education as well as other comparable professions, there are several factors that make the situation of teacher educators particularly uneasy.

4.3 Teaching and 'Teacher Educating'

A partial explanation of the situation confronting teacher educator lies in the distinction between 'teaching' and 'teacher educating', between being a teacher and a teacher educator. Being concerned with 'teaching how to teach' teacher education does not enjoy the same immediacy of purpose, sense of thrill and excitement associated with teaching on the ground. This imparts teacher education a gap and distance from actual teaching and correspondingly teacher and teacher educator come to occupy positions nearer and farther from classroom teaching.

Following the distinction suggested by analytical philosophers, teacher education which is essentially concerned with 'teaching how to teach' can be considered a second order activity as against teaching *per se*, which is a first order activity. Teacher education is a reflective undertaking that also issues forth in pedagogical prescriptions for carrying out teaching at the ground level. Being a meta activity it deals in showing how things are done at school and classroom levels, explaining the 'reason, the why' of things and the basic theory and principles behind classroom practices. These call for skills and understanding of a different kind in addition to the skills required for actual school teaching (Seshadri, Teacher Educators: Profile and Status, in Fifty Years of Teacher Education in India). For example, the NCF (2005) Position Paper Teacher Education for Curriculum Renewal has suggested adoption of androgogy, principles of adult learning as appropriate pedagogy in teacher education programmes. The NCTE norms committee suggested inclusion of internship in a college of education to impart teacher education specificity to the M.Ed. programme. What, in the final analysis, distinguishes teacher educators from teachers is their concern for identifying useable second order knowledge – theories, principles, generalizations – from first order practice and communicating it to their charges. The 'teaching' 'teacher educating' distinction can be illustrated further by examining the role of the teacher educator in the context of school education.

4.4 Teacher Educator and School Education

The profile and role of teacher educator are to be conceived not *a priori* but primarily with reference to the philosophy and principles that govern the various aspects of school education – aims of education, curriculum, methods and materials and the socio-cultural context in which the school functions – and the role of the teacher in translating educational intents into practical action. Accordingly, if a teacher *qua* teacher is

expected to behave in a particular way, for example, (as cited in the NCF position paper) –

- care for children and love to be with them;
- understand children within social, cultural and political contexts;
- not treat knowledge as a 'given', embedded in the curriculum and accepted without question;
- perceive child not as a passive receiver of knowledge;
- encourage its capacity to construct knowledge;
- discourage rote learning;
- make learning a joyful and participatory activity;
- critically examine curriculum and textbooks;
- contextualize curriculum to suit local needs;
- treat all children equally;
- organize learner-centred, activity based, participatory learning experiences – play, projects, discussion, dialogue, observation, visits;
- integrate academic learning with productive work;
- promote peace values - democratic way of life, equality, justice, liberty, fraternity, secularism and zeal for social reconstruction;
- reflect on her teaching experience;

then, it follows that the teacher educator (whose job is to contribute toward the preparation of such a teacher) should share the underlying educational philosophy and also possess the needed understanding and professional competencies to develop such behaviours in his/her charges (student teachers). This would imply corresponding change in the behaviour of teacher educator *qua* teacher educator like the following:

- Engage would-be teachers with the larger socio-political context in which education and learners are situated;
- Engage teachers with children in real contexts than teach them about children through theories;
- Bring into the TE curriculum and discourse trainees' own assumptions about children and beliefs about knowledge and processes of learning;
- Help teachers to reflect upon their own positions in society – gender, caste, class, poverty, linguistic and regional variation, community, equity and justice;
- Focus on the developmental aspects of children with constant reference to the socio-economic and cultural contexts of children;
- Engage with theory along with field experiences to help trainees to view knowledge not as external to the learner but as something that is actively constructed during learning;
- Provide opportunity for trainees for reflection and independent study without packing the training schedule with teacher directed activities;

- Integrate academic knowledge and professional learning into a meaningful whole;
- View learning as a search for meaning out of personal experiences and knowledge generation as a continuously evolving process of reflective learning;
- View knowledge not as an external reality embedded in textbooks but as constructed in the shared context of teaching-learning and personal experience;
- Provide opportunities to the student teacher to critically examine curriculum, syllabi and textbooks;
- Change perception of child as a receiver of knowledge and encourage its capacity to construct knowledge;

In other words, the locus of the functions of teacher educators lies in the role perceptions of teachers with regard to educational objectives, practices and processes of the school.

4.5 Stage specificity in the Preparation of a Teacher Educator

It is generally the case that those who function as teacher educators do not possess appropriate stage specific professional training or experience. The paradox is that although teachers are trained/appointed for specific levels of schooling (even this is not strictly adhered to now-a-days with B.Eds. being allowed to teach in primary schools) teacher trainers are not. For a long time, it has been taken for granted that the existing arrangements for teacher preparation at different stages would do as well for teacher educators too, B.Ed. for elementary teacher educator and M.Ed. for secondary teacher educator. B.Ed., it may be noted, is basically a course for preparing secondary school teachers. The logic that seems to operate is that one's higher position in the educational hierarchy would entitle one to train others working at the lower levels irrespective of whether one is possessed with the relevant skills. The difficulty is exacerbated by the absence of established mechanisms to create a professional cadre of teacher educators, especially at pre-primary and the elementary stage. At present elementary teacher educators in their bid to upgrade their professional qualifications study M.Ed. The IASE brief includes the training of elementary teacher educators which they do by running the M.Ed. programme of the concerned university. But M.Ed. cannot meet the requirements of primary teacher training unless it is redesigned to impart the needed focus (Seshadri, "Educating the Educators: Review of Primary Teacher Training" in India Education Report).

The worst sufferer of this situation is elementary education. First, the large scale expansion of the elementary education sector and the plethora of new support structures that have come up at the district and sub-district levels has created the need for suitably trained human resources to carry out such field functions as training of teachers, field supervision of educational activities, research and development of

curriculum and teaching-learning materials, advocacy and developmental work with teachers and communities. Other than the activity of teaching children in elementary school, all other functions related to this sector of education are attended to by people who have been trained for and taught only at secondary level due to lack of appropriately trained personnel in elementary education. There exist no large scale, focused degree/post degree programmes in these areas. Second, despite its critical importance to the individual and the nation, elementary education remains sadly neglected as a knowledge field. As a knowledge field, elementary education has its distinct concerns, a domain of interdisciplinary knowledge, concepts and methodological perspectives. A wide range of experiences, insights and knowledge of different kinds related to elementary education exists in the country in the form of NGO work, academic and field research and other quarters. This scattered experience and knowledge needs to be brought together to evolve a coherent vocabulary, researched and documented knowledge base and informed perspectives for elementary education.

Imparting stage specificity to teacher education programmes is an issue that needs to be addressed in the wider context of irrational disparities in the career path, remuneration package, service conditions and conditions at the workplace and lack of rigour in the training of a teacher educator.

4.6 The Knowledge Base of Teacher Education and Teacher Educators

One expects that teacher education as it is practiced rests on a firm knowledge base, that its content, modes and processes are duly shaped by reflective practice and that teacher educators as a body of professionals possess and deliver definitive knowledge as would lead to improved school and classroom practices. Whether this expectation conforms to reality is, however, a problematic; hence, the controversy about the knowledge base of teacher education, its nature and composition.

The knowledge base of teacher education is a much discussed issue among teacher educators. The raging debate has generated a wide range of views on the components of the knowledge base as well as their characteristics. The well known study of Shulman (1987) identifies the following components of the knowledge base of teacher education:

Content knowledge: foundation courses (history, philosophy, sociology, psychology, sound scholarship and ability to relate fundamental concepts to teaching-learning process), methods course (mastery of subject matter). The product and process dimensions of knowledge. The process dimension is particularly important for teacher educators.

Pedagogical content knowledge: blending of content and methodology into an understanding of how particular topics, problems, issues are organized, represented and adapted to the interests and abilities of learners and presented for instruction.

General pedagogical knowledge: broad principles and strategies of classroom management and organization that transcend subject matter.

Curricular knowledge: knowing the relationship between the course being taught and other courses that students are taking, have taken before or will take in future as part of their total curriculum.

Knowledge of learners and their characteristics: (individual differences, learning theories, etc.).

Knowledge of educational contexts (classroom, school, etc.)

Knowledge of educational ends, purposes and values.

Shulman identifies the sources for building a knowledge base as: *Scholarship in content disciplines*; *Materials and settings of institutionalized educational process* (curricula, textbooks, school organization, structure of the teaching profession); *Research on schooling, learning, teaching,* etc and *The wisdom of practice itself.*

Similar probing into what constitutes the knowledge base of teacher educator training is found wanting. It is argued that the absence of serious inquiry into the dimensions of knowledge needed to function effectively as a teacher educator accounts for, there not being any specific programmes for their professional preparation. What is needed is a meaningful conceptualization of the role of a teacher educator and the areas of competence needed to function in that role.

Explaining the distinction between knowledge base of teacher education and knowledge base of teacher educators, Sapre (Toward a Knowledge Base of Teacher Education) says that the former refers to the content and level of professional education that prospective teachers must receive in order to engage in competent practice; the latter refers to the quantum and quality of knowledge that teacher educators must possess in order to prepare prospective teachers for competent practice.

Quoting from the works of Shulman, (1987), Eraut (1994), Hargreaves (1996), he points out that the knowledge base for teacher educators can be understood with reference to competency based approach to education: conceptualization of the role and its multiple dimensions, tasks inherent in the role, identification of the components and level of competence needed for effective performance. Since teacher education is a university-based enterprise, the role must be conceptualized within the norms of university culture – discovery of knowledge, dissemination of knowledge (through research and teaching), and translation of knowledge into behaviour. Competencies essential for effective performance are: ability to synthesize and integrate (teacher education draws on theories and models from the behavioural quantitative and social sciences – psychology, sociology, anthropology). Scholarship is to be integrated with excellence in teaching, theory with practice and research with teaching.

Policy Perspectives in Teacher Education (NCTE, 1998) draws attention to two important points in the explanation of the knowledge base

of teacher education. First, the knowledge drawn from disciplines cognate to education needs to be broadened further in order to convert it into an educational form, and bring it to bear upon practices in education. Teacher educators have the responsibility of discerning relevant elements of knowledge in other disciplines and forging them into unified knowledge, meaningful enough for an entrant to understand and absorb. This makes a case for equipping teacher educators with the necessary technical know-how for such tasks which require a focused effort. Secondly, unlike the hierarchical arrangement in other disciplines, knowledge used in teacher education has the same characteristics, irrespective of the stage for which a teacher is being prepared. That is, the common opinion that knowledge in a subject can be organised into linear or concentric arrangement in respect of its complexity and difficulty, across stages, cannot be extended to the organisation of knowledge in teacher education. Teacher educators for each stage of schooling must be familiar with the characteristics of this knowledge, have adequate understanding and the technology needed for transmitting it, so that it produces the necessary and expected behaviour among student teachers. For doing this, teacher educators have to be 'highly specialized' professionals who not only generate the relevant knowledge base both from available theoretical understanding and field operations, but also identify suitable transaction modes and continually seek effective alternatives to all these in a systematic manner.

The NCF Position Paper presents a fresh insight into the understanding of the knowledge base issue. The knowledge component in teacher education, it says, is derived from the broader area of the discipline of education and it needs to be represented so. It is thus multi-disciplinary in nature within the context of education. In other words, conceptual inputs in teacher education need to be articulated in such a manner that they describe and explain educational phenomena – actions, tasks, efforts, processes, concepts, events and so on. In doing so, concepts from cognate disciplines may be used but need to be integrated for arriving at composite understanding of educational components. The point of significance here is that while formulating knowledge components for teacher education conscious efforts need to be made to represent explanations from the perspective of education rather than of other disciplines with implications to education. Instead, attempt must be made to shift from the usual theory to practice to practice to theorization. Further, one should acknowledge that knowledge in teacher education comprises of various kinds – conceptual, technical, professional, etc.

In sum, we may note that the knowledge base for the education of teacher educators is constitutive of the knowledge base of teacher education and the additional knowledge and skills that are involved in transmitting the former to the prospective teachers. The training requirements of a teacher educator emerge from the knowledge, skills and competencies leading to a deeper understanding of the philosophy, programmes and processes of school education (primary and secondary)

and development of professional skills for training teachers. What is missing in extant programmes for preparation of teacher educators is the latter component. The *NCTE Policy Perspectives* says that an effective teacher educator needs to possess knowledge about specialized and efficient ways of exposing student teachers to varied ways of teaching and be capable of helping them to acquire a distinct style of teaching of their own. This function would need an emphasis on knowledge of different training techniques, their place in the preparation of prospective teachers in relation to their behavioural attributes, and further helping them to internalize the available techniques and act in ways that are individually suited to them.

Illustrations of learning experiences that add substance to the education and training of a teacher educator (as contrasted with teacher) have already been provided earlier. What is needed is systematic derivation and articulation of the knowledge elements that can be perceived as belonging to this domain and their integration into the knowledge base of teacher education programmes. The programmes would then qualify to function as programmes for preparation of teacher *educators*.

4.7 Need for Strong Systemic Response

The difficulty of not having a secure knowledge base is not something peculiar to teacher education. It is characteristic of most modern professions which are interdisciplinary. Unfortunately, in the case of teacher education this inherent difficulty is compounded by the system's lack of initiative to institute enabling measures to encourage good practices and corrective actions to eliminate the bad ones. For example, in the past, teacher educators came from the ranks of experienced school teachers. In fact, it was considered a crowning glory for a career teacher to become a teacher educator. And this high point was reached only after years of school teaching experience was tempered with higher level formal learning and understanding of educational theory from the interdisciplinary perspectives of philosophy, history, sociology and psychology. Later, at least three to five years of teaching experience in a school was prescribed as a requirement for entering the profession apart from possession of a post-graduate degree in education. With mushrooming of teacher education institutions all over the country and the consequent demand for trained manpower to run them, these conventions were cast aside. Nor were alternate arrangements available for the supply of quality teacher educators. Teacher education has thus singularly failed to create a reliable and vibrant system for supplying competent human resources to run the thousands of teacher education institutions in the country

It has already been pointed out that what distinguishes teacher educators from teachers is their concern for identifying usable second order knowledge – theories, principles, generalizations – from first order practice and communicating it to their charges. To prepare such teacher educators what we need are programmes at higher levels which are focused on the knowledge, skills and competencies leading to a deeper

understanding of the philosophy, programmes and processes of school education (primary and secondary) and development of professional skills for training of teachers.

The need for strong systemic response has been urged by several critics of the existing thinking and practices of teacher education. Referring to continuous reflective engagement of student teachers through the process of connecting knowledge with their own experiential realities visualized by the new curricular framework, Khader says, no doubt it is an insightful and challenging idea but raises several concerns. The prevailing theoretical knowledge that forms the base of on-going teacher education courses does not fit into the suggested perspective. Formulation of theoretical knowledge from multidisciplinary perspective becomes an essentiality and it needs to be evolved for structuring the course content and details. Evolving the methodology for weaving the theoretical knowledge with the student teacher's experiential realities is yet another challenging task. The ground reality is that teacher education institutions across the country are at different levels of quality for providing for the development of professionalism in teacher training. Most of them need to be empowered for operationalizing the suggested curriculum in its intended form. Creation of texts and sub-texts of course components and well informed teacher educators as change agents emerges as a critical concern in this context. Teacher education system needs to evolve programmes that help prospective teachers to understand deeply learning, social and cultural contexts and be able to enact these understandings in complex classrooms serving increasingly diverse students; if prospective teachers are to succeed at this task teacher educators need to design programmes that transform the settings in which novices learn to teach and later become teachers (Darling-Hammond, 2006).

5. M.Ed. as a programme for preparation of teacher educators

5.1 Status of M.Ed. Programmes

M.Ed. is the dominant PG programme in education offered by Indian universities. The entrants are already initiated into rudiments of educational theories, institutions, processes and practices. The course draws a large variety of clientele: fresh graduates from different disciplines with B.Ed., experienced teachers, education functionaries in different government departments. Due to the heterogeneous clientele and shifting demands of jobs related to education, the course has to cater to wide range of academic and professional needs. The products are employed by Boards of school education, directorates and inspectorates of education, schools, SCERTs, teacher training colleges and institutes as teachers, teacher educators, curriculum experts, evaluation experts, population education experts, etc.

The M.Ed. has come under severe criticism on several counts. First, as a professional education programme, it lacks specificity, focus and

rigour. The wide range of academic and professional needs in education like training of teachers, educational administration, educational research and extension, development of curriculum and teaching-learning materials and so on need more focused interventions; the omnibus M.Ed. cannot fulfil these expectations. Even as a general programme of PG studies in education M.Ed. has not responded to the many shifting and newer concerns in education. It is also indistinguishable from the 2 year M.A in Education (considered a programme of liberal, academic study of education) because in actual course design and content the two do not differ on any sound academic rationale. The existence of two parallel PG programmes in education has created an anomalous and confusing situation and has raised questions of equivalence.

From the standpoint of preparation of teacher educators, M.Ed. is weak, inadequate and lacking in focus. Although M.Ed. is generally accepted as the requirement for one to become a teacher educator, the programme as offered in most universities is simply an extension of B.Ed. seriously lacking in inputs focused on the preparation of teacher educators – secondary or elementary.

The NCF Position Paper observes: "Existing programmes of teacher education such as the M.Ed have become, in many universities, programmes of liberal studies in education and are woefully inadequate in facilitating a deeper discourse in education and an opportunity for inter-disciplinary enquiry. These offer little scope for professional development and research in key areas of school education such as curriculum enquiry and design, pedagogic studies, epistemological concerns and issues related to school and society. As a consequence, the dominant ethos of teacher education remains confined to a positivist approach drawn from classical schools of thought in educational psychology and having little contact with a large number of innovative experiments that have mushroomed across India since the 1980s".

From the point of view of education of teacher educators, the oft repeated charge is that the typical M.Ed. programme is very poorly focused with respect to training of teacher educators, primary or secondary. The seriousness of the problem has now dawned on all concerned and the question of training the trainers is being seriously addressed. The effective functioning of the more than 500 DIETs, the country's largest network of elementary teacher education institutions, depends critically on the supply of adequately trained human resources especially in the field of elementary education. It is realized that B.Ed. which is focused on secondary school teaching cannot on its own qualify one to train elementary school teachers and the M.Ed. which in most cases is an extension of B.Ed. cannot equip one to function as a trainer.

5.2 Imparting Professionalism to M.Ed.

Several proposals are being made to improve the design and impart

greater rigour and professionalism to M.Ed. Efforts are afoot to align M.Ed to teacher education, elementary or secondary. The need is now being effectively articulated for identifying the objectives of education of teacher educators and the designing of stage specific, skill focused programmes for preparing teacher educators for different levels of school education. The NPE Review made a specific recommendation to organize a specially designed training programme to fit all the desired attributes of a teacher educator. Recognizing the need for two kinds of teacher educators one, for the theory part and the other, for the practical part, the NCTE curriculum framework (1978) emphasized the need for developing a task oriented M.Ed. which provided scope for practical work in education. To impart professional edge to the programme keeping in view the learnings required of a teacher educator study and observation of a teacher education institution and some experience of functioning as a teacher educator is built into some designs of M. Ed. The provision of field-based dissertation and compulsory internship in a teacher education institution requiring observation, study, instruction and reflection is expected to fulfil this need. The NCTE norms committee suggested inclusion of internship in a college of education to impart teacher education specificity to the M.Ed. programme.

There are also proposals for specialized P.G. courses in teacher education (Master of Education in Teaching), a 2 year advanced course in education with provisions for specialized areas in development of scholarship in education and applied fields - teacher education, curriculum planning, evaluation, counselling, sociology, philosophy of education, etc.

Apart from programmes that address their immediate needs of training and educating prospective teachers' teacher, educators also need further in-depth professional training in specified areas of education. Such training may not be available to them in the multi-purpose models of M.Ed. even in their improved form. These areas may be: educational research methods, ICT applications in teacher education, curriculum, materials development, etc.

Such efforts have been made in the recent past. For instance, the National Institute of Education of the National Council of Educational Research and Training instituted a one-year course, namely, a Diploma in Research Methodology in 1963 to prepare researchers in education. The course was converted to 'Associateship Course in Education' in 1967, to cover a large number of specialized areas in education for preparing qualified personnel in education for varied positions in institutions of education. After a few years the course was discontinued. The Zakir Hussain Centre for Educational Studies of the Jawaharlal Nehru University started in 1970 an M.Phil. (Education) course to train teachers and researchers with a strong background in the social sciences - sociology, economics, psychology and history - in education. It is time to rethink this issue especially in view of the changes overtaking educational studies.

Towards a specialization-centred M.Ed. programme catering to a wide

range of disciplinary specializations, the UGC has proposed M.Ed. with core papers of philosophical and social foundations of education, psychological foundations of education and methodology of educational research and choice of specialization areas. These include: Guidance and Counselling, Distance education, Value education and Human rights, Language Education, Comparative education, Teacher education, Special education, Educational technology, educational measurement and evaluation, curriculum development, management, planning and financing of education, environmental education, science education, yoga education.

6. A Promising Innovation: Collaborative Post-Graduate (CPG) programme of M.A. Education (Elementary)

CPG is a collaborative post-graduate programme in elementary education launched by the Tata Institute of Social Sciences, Mumbai. It is a first of its kind, pan-Indian programme intervention in elementary education at the post-graduate stage. It is interdisciplinary and collaborative design - the collaborating organizations are: Homi Bhabha Centre for Science Education, Eklavya, Digantar and Vidya Bhavan Society - and dual mode operation (on-line learning and contact) makes it a bold and novel venture. Its twin objectives are to provide a firm disciplinary base to elementary education and train a range of professionals with different specializations - teachers, teacher educators, curriculum and textbook developers, educational planners, administrators and researchers.

The two-year (4 semesters) CPG is available for those with a bachelor's degree with a minimum of 50% marks. The programme is designed around the core areas of philosophy, sociology, child development, cognition and learning, curriculum, policy and institutions and research methods and optional courses in gender, pedagogy, curriculum and management. It has 10 courses and a two week residential field attachment at sites known for innovative practice.

The programme is planned in the dual mode giving equal significance to both the contact as well as distance components. The residential contact period is planned for 360 hours of face-to-face interactions with faculty and the peer group of learners. The distance component – 1500 hours of instructional time – is planned as a continuing interaction between faculty and the peer student group. It is sustained through print - reading and assignments, and e-mail, extending to web-based online interaction. An E-learning system has been designed for the purpose. The courses are taught by faculty members involved in designing the course and developing course materials.

Evaluation covers end-term examination, assignments, term paper and field attachment with assigned weightages. All courses are creditized (cpgedu.tiss@gmail.com).

The significance of the innovation lies in its approach to address the two critical needs of the teacher education system. First, it demonstrates

an approach to build professional preparation of teachers, teacher educators, curriculum and textbook developers, educational planners, administrators and researchers around integration of academic knowledge and field learning. Secondly, through its innovative design and transaction of curriculum covering all core and foundational areas of education - theory, issues, research – and their integration with practical skills and field learning it demonstrates the scope, content and methods of elementary education as a knowledge field.

7. Research on Teacher Educators

What does scholarly research tell us about teacher educators – about the kind of persons and professionals they are, in other words, their profile, their education and training, their social and professional status, their professional performance and their perceptions on a wide range of issues in teacher education?

Much as one would like to be enlightened on such issues, available research is of no help. It is disappointing that no clear lines of research generally in teacher education but more particularly in relation to teacher educators have been pursued at the research institution or individual levels resulting in sequential and consequential studies. Nor certain major phenomena or problems have attracted wide attention resulting in concerted efforts / cooperative research conducted by multiple centres and pooled and synthesized over a period of time. Many of the available studies seem to be sporadic and isolated reflecting academic fancies rather than functional value. No major study seems to have been made on total programme restructuring or on drastic revision and experimentation of a subsystem.

Even within this depressing overall scenario, teacher educators and teacher education programmes have not enjoyed the attention of researchers as much as teaching methods and teachers. The neglect of teacher educators, however, is a phenomenon not restricted to India. It is learnt that this is so in other countries (UK, for one) as well. There are not many studies that throw light on issues and concerns affecting teacher educators. Whatever research is available on certain aspects is scanty, scattered and sporadic and does not add up to provide sufficient evidences to draw generalizations on teacher educators as a general category. The difficulty is exacerbated with the phenomenon defying suitable categorization due to the amorphous nature of the concept of teacher educator and the baffling diversities surrounding the policies, programmes and practices related to teacher educators.

There are many important research areas that need the light of research: objectives of teacher education, effectiveness of teacher education programmes, curriculum analysis, curriculum transaction, training techniques, professional attitudes, competencies, role perceptions, psychological variables like intelligence, personality, adjustment, problems,

studies of teacher educators and of innovations, studies on institutional features and working, impact of in-service programmes. In particular, professional and personal quality variables, the academic and professional competencies and other kinds of suitability have escaped the attention of the researchers. What we need as a first requirement are status studies of: teacher education programmes at different levels (pre-school, elementary, secondary and higher secondary) – number of programmes, nature of programmes, profile of students and programmes for training of teacher educators at different levels – qualifications as per norms, number and nature of programmes, institutions, profile of entrants (CTEs, IASEs, Universities), critique of existing arrangements – qualification requirements, programmes and institutions – adequacy of M.Ed.

8. Enhancing the status of educational studies and the professional development of teacher educators

Isolation of education as a discipline from the system of higher education is identified as one main cause for the continued low status of educational studies. Several suggestions have been made to deal with this issue. One proposal is to diversify specializations into areas of curriculum and pedagogic studies in mathematics, languages, social sciences and sciences and encourage students to pursue PG in a chosen discipline along with the option of specializing in a select curriculum and pedagogic study course. It is also suggested that UG students be provided with a variety of routes to pursue studies in education like four year integrated courses in elementary and secondary education, electives in educational studies followed by a range of PG studies in education, social sciences, sciences, humanities, mathematics, language studies, liberal arts. Such diverse routes are likely to tap talented and motivated young people to enter into education and pursue options like teacher education, research, curriculum, pedagogy (NCTE, 2006).

Due to poor equipment and inadequate preparation, teacher educators cannot make meaningful contributions in several decision-making situations related to teacher education like curriculum development, modernizing pedagogy, sensitivity towards emerging needs and demands on the education system, particularly the school system. The demand on teacher educators in regard to these and related aspects are peculiar to teacher education. This is essentially because of the nature of knowledge in the field as well as the structural diversification that has occurred in the organization of teacher education (NCTE, Policy Perspectives).

Presently the professional development of teacher educators is linked with and incidental to the training and development of teachers. Teacher educators are considered as key resource persons/master trainers for continuing education programmes organized for teachers. It is through teacher educators, mainly, that teachers are reached especially when the numbers involved are large and the training is arranged as a cascade.

These programmes mainly are focused on development/up-gradation of teacher competencies related to teaching of regular curriculum areas as well as new and enrichment interventions proposed from time to time.

This arrangement serves the teacher educators well in their role as conduits to deliver educational communications. But teacher educators also need to update their disciplinary knowledge and understanding in different areas of education. Periodic up-gradation of the knowledge base of teacher educators needs more focused and continuing interventions involving experts. Although there are programmes targeted exclusively for teacher educators, they are infrequent and of ad-hoc nature. There also exist professional development opportunities for teacher educators in the form of NCERT's seminar readings and research grants under ERIC and NCTE. But teacher educators have yet to organize themselves as a fraternity and voice their demand for organized and concerted action towards their professional development. The Indian Association of Teacher Educators and the associations at the state levels have not emerged as strong, powerful professional organizations reflecting the professional needs and aspirations of the teacher educators.

What is needed is a comprehensive and enduring arrangement for the professional development of teacher educators and enhancement of the status of education as a discipline. It is heartening that the WG has addressed the issue in all its aspects and has come out with a range of recommendations covering institutions, structures, programmes, activities and incentives. The recommendations include:

- Setting up of Schools of Education in selected (30) university departments including the RCEs for breaking the isolation of elementary and secondary teacher education from the mainstream and integrating it with higher education The Schools will have Centres for pre-service teacher education, curriculum research policy and educational development, learning and pedagogic studies, assessment and evaluation, professional development of teacher educators and teacher education curricula and teacher resource and academic support.
- Setting up one Inter-university centre at the national level functioning under the UGC to coordinate the Schools in terms of academic content: redesigning teacher education curricula, developing curriculum materials, commissioning of materials in regional languages, setting up of web portals on curriculum and pedagogic materials for teacher education. The mandate for centre would be to provide an integrated focus on elementary and secondary levels of school education.
- Instituting Specialized Centres of Education in lead national level institutions like IISc, Homi Bhabha Centre, TIFR to offer sandwiched PG courses of 3 years duration (B.Ed for 2 years

or M.Ed for 3 years towards developing a specialized cadre of senior secondary school teachers and teacher educators.

- Establishing four Regional Centres of Educational Management in the IIMs and NUEPA to provide a PG degree in educational management for Heads of DIETs, SCERTs.
- The Centre for Professional Development of Teacher Educators will offer Masters programme in elementary education/ secondary education with specialization in curriculum and pedagogic studies in mathematics/science/social science education and assessment.
- Reorientation of select secondary school teachers for elementary school teaching through Advance Diploma in elementary education, focused programmes of professional development for DIET/SCERT faculty including curriculum and pedagogic studies and disciplinary knowledge base.
- Special emphasis for professional renewal of existing teacher educators through Refresher Courses for all teacher educators including elementary school teachers in the proposed university Schools of Education and special subject refresher courses by university departments.
- Fellowship Programme: 200 Fellowships for teacher educators working in the government and aided institutions of teacher education. The Fellowships will offer opportunities for attachment to institutions of higher learning to pursue teaching and research for a period of 2 years.
- Periodic Academic Enrichment Activities: Public lectures, film and book discussion sessions, need based issues etc, short-term orientation courses on teaching learning skills, meta learning strategies related different curricular areas and child development, pedagogical aspects related to reading, writing, thinking and instructional design theories for curriculum developers, institute teacher educator fellowships to undertake research with provision for mentoring.
- The Centre for Teacher Resource and Academic Support: Provision of teacher resources, children's literature, variety of school curricula, textbooks, multimedia materials, internet access; platform for teacher interaction, exchange, seminars, study sessions, academic support face to face as well as through ICT; development of learning and teaching materials for use in schools and sharing across schools

Taken as a whole, this package of recommendations holds out high hopes for the enhancement of the status of educational studies in general and professional development of teacher educators in particular.

9. Preparation of Teacher Educators – Future Directions and Possibilities

Presently the education of teacher educators takes place mainly through the well entrenched one year M.Ed. Further advancement is available through M.Phil. and Ph.D. routes. As already pointed out, none of these are designed specifically to prepare a teacher educator although they all provide knowledge related to some aspects of teacher education.

It is a promising development that the education of teacher educators has been acknowledged as a major issue in teacher education and academic bodies have addressed themselves to the task of curriculum renewal. This is evident in the different models of M.Ed that have been proposed by individual universities and innovative programmes of teacher preparation launched by some institutions. The concern to make the M.Ed. a focused learning encounter rather than a general study of education is clearly visible. The need for professional rigour, relevance of content, emphasis on research related skills are also appreciated. These concerns demand that we think out of the box in addressing the issue of new programme designs for the education and training of teacher educators. Before we make any attempt at sketching the possible scenarios in this regard, we may restate the premises on which the training and education of teacher educator is to be based. These are:

- The distinction between education as a liberal study and education as a professional preparation needs to be appreciated
- The knowledge component in teacher education is multi-disciplinary 'educational' knowledge; it needs to be articulated in a manner that it describes and explains educational phenomena – actions, tasks, efforts, processes, concepts, events and so on.
- The curriculum content should be derived from and reflect the knowledge base of teacher education as appropriate to the stage/specialization area
- The generic components of a teacher education programme may be: foundations of education, skill learning in the professional area (teaching, teacher training, curriculum and materials development...) and professional practice in the field and additional enrichment learning as needed
- The programme may be conceived in terms of stage specific understanding of theoretical and practical learnings
- The programme should involve rigorous professional training in field settings under the guidance and supervision of mentors over an extended duration

Apart from proposals for comprehensive reform of teacher education like integrated programmes providing for diversification of specializations and diverse routes for UG students as discussed before, one can conceive

a variety of programme designs and structures which do not call for drastic structural changes. These could be:

I. Programmes at degree level to train teacher educators at the ECCE/primary/elementary level

The nomenclature could be: B.Ed. (early childhood education, primary/ elementary education), B.El. Ed., etc.

Focus: teacher education at the respective stage.

Entry qualifications: certificate/diploma in education focus on pre-school/ nursery education, primary/elementary education; a preferred requirement could be experience of having worked as a teacher for 2-3 years at the respective stage.

Duration of training: one year.

Programme content: foundations of education (covering child development and learning, sociology and philosophy of education), teaching methodology, appropriate stage-specific field experience and relevant practicum.

Interested graduates and post graduates could also be encouraged to join the course.

II. Programmes at PG level to train teacher educators at the ECCE/ primary/elementary level

Nomenclature: M.Ed. (early childhood education, primary/elementary education)

Focus: teacher education at the respective stage

Entry qualifications: B.Ed., B.El. Ed., B.A./B.Sc. Ed., B.Ed. (pre-school/ nursery education, primary/elementary education), a preferred requirement could be experience of having worked as a teacher for 2-3 years at the respective stage

Duration: one year.

Programme content: foundations of education (covering child development and learning, sociology and philosophy of education), teaching methodology, educational research, appropriate stage-specific field experience and relevant practicum.

The programme could target DIET staff.

III. Programmes at PG level to train teacher educators at the secondary/higher secondary level

Nomenclature: M.Ed. (teacher education)

Focus: teacher education at the respective stage

Entry qualifications: B.Ed, B.El. Ed, B.A./B.Sc. Ed, B.Ed. (pre-school/ nursery education, primary/elementary education), a preferred requirement could be experience of having worked as a teacher for 2-3 years at the respective stage

Duration: one year

Programme content: foundations of education (covering child development and learning, sociology and philosophy of education), teaching methodology, educational research, appropriate stage-specific field experience and relevant practicum.

The programme would suit teacher educators in CTEs and IASEs.

IV. Programmes at PG level to provide advanced knowledge in specified specialization areas of education

Nomenclature: M.Ed (specialization area)

Focus: deeper, specialized knowledge in different sub-disciplines of education like educational research, curriculum and materials development, educational planning and administration, ICT applications in education, inclusive education, measurement and evaluation

Entry qualifications: B.Ed., B.El. Ed., B.A./B.Sc. Ed., B.Ed. (pre-school/ nursery education, primary/elementary education)

Duration: one year (with two specialization areas) or two years with the first year focused on teacher education as in II or III.

Programme content: foundations of education (covering child development and learning, sociology and philosophy of education), teaching methodology, educational research, appropriate stage-specific field experience and relevant practicum.

The programme aims at the professional enrichment of teacher educators and would particularly suit faculty in university departments of education, colleges of teacher education/IASEs and DIETs.

V. Programmes at PG level on the lines of CPG M.A. (Education) launched by TISS, Mumbai

The programme has been described in detail under section 6. We may look forward to how the innovation will be received by the teacher education establishment. The venture also has the potential to release several spin-offs like:

- The programme focus could be changed to secondary teacher education by making suitable changes in curriculum and teaching organization keeping the basic principles and framework intact.
- Universities may try out the collaborative approach for interdisciplinary course development involving their faculties of

education, philosophy, social and behavioural sciences and NGOs. The strategy may be tried out for the programme as a whole or to aspects of it like course conceptualization and design, teaching and field attachment, etc.

- Institutions currently offering teacher education programmes through the ODL mode may consider the adoption of the e-learning system of CPG
- Select semester courses of CPG can be offered as Diploma/ Certificate courses for those who wish to specialize in a particular area (for example, philosophy of education). This would especially help university faculty who wish to deepen their understanding in chosen specializations and who may not like to go through the entire course as a full-time student
- Segments of CPG present excellent illustrations of: designing for reflective study, imparting equal significance to both the contact and distance components, individual planning of field attachment, self-study pedagogy through structured assignments, etc. Enterprising universities and colleges may design and implement their own situation-specific models incorporating CPG-Edu's. innovative features.

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Chapter 14

Quality Assurance in Teacher Education

MARMAR MUKHOPADHYAY

1. Introduction

This paper deals with quality assurance – ensuring quality; and not quality control. Quality control is externally driven; quality assurance is internal and process driven. It is an important dimension of change management. Quality assurance in teacher education needs special attention because of its unique positioning within the system and its role in education.

Teacher education is uniquely located in the educational system. Like other disciplines and departments in the universities, teacher education is a target of quality assurance mechanisms. It is also an instrument of quality assurance, particularly in school education. For example, if the programme in physics in a university is of high quality, it produces high-quality students of Physics. As they pass out, they enter banks, industries and government. Very few enter research laboratories and teaching where good understanding of physics is relevant and necessary. When it comes to working in the banks, industries, government, etc. quality of knowledge and skills in physics does not matter; because good students of history or geography perform equally well as the graduates in physics do on those kinds of jobs that are unrelated to the subject.

Good quality teacher education programme, at the first instance, produces high-quality students of education. Large majority of them join teaching profession. They, then, influence the quality of education in the schools.

Good schooling is fundamental to national development, because schools supply the largest single human resource at the lower end of the human resource hierarchy. Further, school education feeds higher and professional education. Without quality school education, higher and professional education cannot achieve quality. The islands of quality in

higher and professional education such as Indian Institutes of Technology (IITs), medical institutions, some universities and some university departments exist because of the high-quality students from schools. Since the number of students passing out of the School Board Examinations is large, such good quality institutions get adequate number of students though by default. This *'quality by default' model is unsafe for sustainable national development.* It is also unacceptable because of high wastage of human talent and national resources. Between grades 1 and 10, Gross Emolument Rate, (GER) is 77%, 33% never rural. 62% drop-out by class 10th. Hence retention rate is 38%, of the 38% survivors, 64% qualify in the class 10th Board Examination. This system productively is as low as 19%, leaving 81% children high and dry. This pass percentage and system productivity does not reveal the quality of performance.

This situation can be substantially altered by assuring quality teacher through improved quality of teacher education. But the question is, how? The purpose of this paper is to propose certain mechanisms of quality assurance in teacher education.

2. Structure of Approach to the Problem of Quality Assurance in Teacher Education

- A planning model for quality assurance in teacher education.
- Situational analysis of teacher education with an effort to diagnose its strengths, weaknesses and opportunities.
- Organisational micro-analysis and benchmarking.
- Quality assessment vis-à-vis quality control.
- Tools and techniques of quality assessment.
- Methods and techniques of quality management and assurance.
- Sustaining quality in teacher education.
- Organisational mechanism of quality assurance: lessons from National Assessment and Accreditation Council (NAAC).
- Propositions for quality assurance in teacher education.

2.1 Planning Model for Quality Assurance in Teacher Education

Any debate on quality improvement, management and assurance gets bogged down by availability of financial, infrastructural and human resources. Very little reference is made to quality and competence of utilisation of resources. When it comes to human resources, the debate limits itself to number of people and their qualification, rather than their qualities, e.g. commitment, competence, and performance. Dave (1998) provided a comprehensive framework of quality with certain basic principles in each area in a document developed by the National Council for Teacher Education (NCTE).

2.1.1 Five Areas of Commitment

- *Learners*: love for the learners and readiness to help, concerned

about their all-round development, etc.;

- *Society*: awareness and concern about the impact of teachers' work on the degree of advancement of families, communities, and the nation
- *Profession*: internal acceptance of the roles and the responsibilities of the teaching profession, no matter what circumstances one entered it;
- *Excellence*: care and concern for doing everything in the classroom, school, and community in the best possible manner; the 'do it well attitude'; 'whatever you do, do it well';
- *Basic Human Values*: genuine and consistent practice of professional values such as impartiality, objectivity, intellectual honesty, national loyalty, etc. (The role model aspect);

2.1.2 Ten Areas of Competence

- *Contextual Competency*: to provide a wider view of the development of education in society and teacher's role in it;
- *Conceptual Competence*: concepts of education and learning, psychological, sociological, neuro-physiological aspects of education, etc.;
- *Curricular and Content Competencies*: according to specific stage of education, such as primary, upper primary, and secondary;
- *Transactional Competencies*: general, by subject, by stage;
- *Competencies in Other Educational Activities:* planning and organising morning assembly, etc.
- *Competencies Related to Teaching and Learning Material*: classical teaching and learning material, new educational technology, local resources, etc. as well as preparation, selection and use;
- *Evaluation Competencies*;
- *Management Competencies;*
- *Competencies Related to Parental Contact and Cooperation;*
- *Competencies Related to Community Contact and Cooperation;*

2.1.3 Five Areas of Performance

- *Performance in Classroom*: including teaching and learning processes, student evaluation, and classroom management;
- *School Level Performance*: organisation of morning assembly, celebration of national, social, and cultural events, and participation in school level management;
- *Performance in the Out-of-School Activities*: educational activities such as field visits of learners, observation tours, etc.;
- *Performance Related to Parental Contact*: enrolment and retention, regularity in attendance, discussing progress reports,

improving quality of achievement, etc.;

- *Performance Related to Community Contact and Cooperation*: Village Education Committee work, joint celebration of certain events by the community, eliciting community support in school development, etc.

On the basis of job analysis of teachers, eight key performance areas have been derived (Mukhopadhyay 2005). These are:

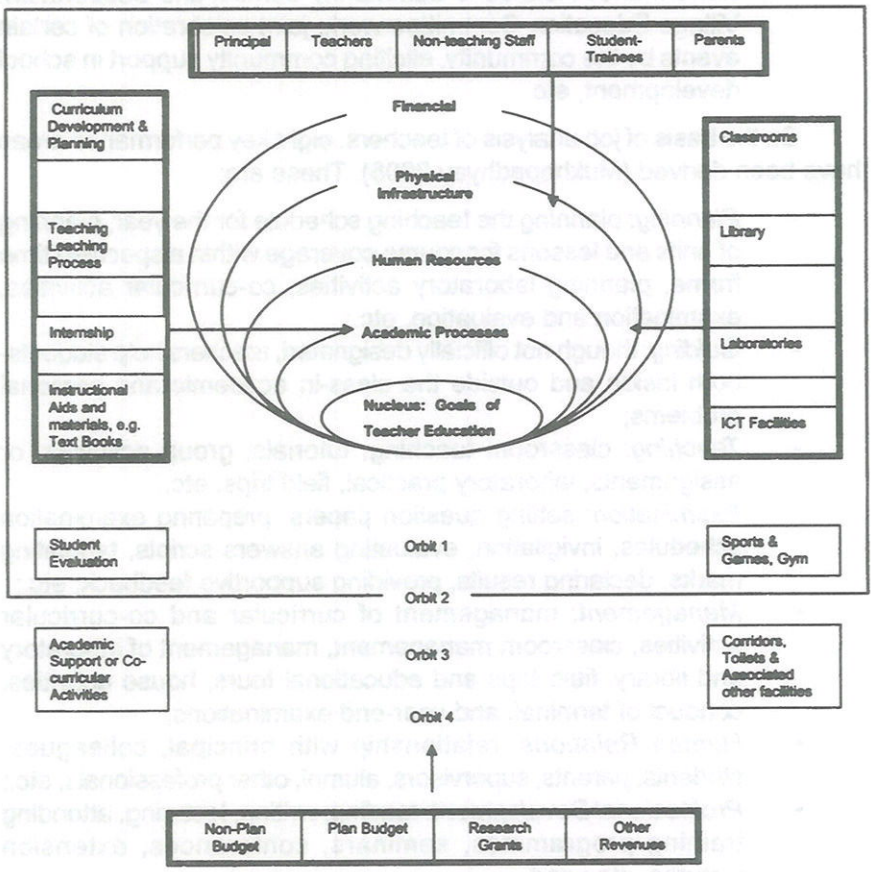
- *Planning:* planning the teaching schedule for the year, planning of units and lessons for course coverage within a specified time frame, planning laboratory activities, co-curricular activities, examination and evaluation, etc.;
- *Guiding:* though not officially designated, teachers help students-both inside and outside the class-in academic and personal problems;
- *Teaching:* classroom teaching, tutorials, group activities, or assignments, laboratory practical, field trips, etc.;
- *Examination:* setting question papers, preparing examination schedules, invigilation, evaluating answers scripts, tabulating marks, declaring results, providing supportive feedback, etc.;
- *Management:* management of curricular and co-curricular activities, classroom management, management of laboratory and library, field trips and educational tours, house activities, conduct of terminal, and year-end examinations;
- *Human Relations*: relationship with principal, colleagues, students, parents, supervisors, alumni, other professionals, etc.;
- *Professional Development*: reading, writing, lecturing, attending training programmes, seminars, conferences, extension lectures, etc.; and
- *Extension and Social Service*: giving extension lectures, writing and publishing, leading and participating in social action programmes, community development, etc.

For effective utilisation of the propositions by Dave and the role analysis of quality of teachers made above, it is important to capture them into a planning model that meaningfully depicts the interrelatedness among the various components of the system and also prioritises, namely, goals of teacher education, the processes, human resources, infrastructures, and finance. The model is presented in Figure 1.

Box 0 : Nucleus of Quality Assurance

The core or the *nucleus* of quality assurance is defining the goals of teacher education – a shift from exclusive definition in terms of quantity to quality, or at the least a balance between quantity and quality. The goal, in this context, is probably, 'providing quality teacher education'.

Figure 1: Orbital Model of Planning for Quality in Teacher Education



First Orbit: Quality assurance is primarily dependent on academic processes such as curriculum development and planning, designing textbooks and instructional aids, and most importantly on the instructional processes. Contention is: a significant degree of quality can be achieved by ensuring quality of engagement between the teacher educators and the student-teachers by improving the instructional processes to support the learning needs and styles of the trainee-teachers.

Second Orbit: As a natural unfolding of contentions in Orbit I, quality assurance in teacher education depends upon the quality of human beings in the system, namely principal, teachers, non-teaching staff, trainee-teachers and parents-Principal's leadership, commitment-competence-performance of teaching and non-teaching staff, and involvement of students, and also parents. Almost without exception, non-teaching staff is excluded from the dialogue on quality assurance in teacher education. The fact that they contribute to the over all quality of life in the teacher education institutions, the quality assurance mechanism must engage with the non-teaching staff. There is a new realisation. The NAAC has initiated

the process of involvement of students in improving and managing quality of education on a sustainable basis. The quality assurance mechanism in teacher education must examine the involvement of trainee-teachers in quality improvement in teacher education.

Third Orbit: Quality assurance in teacher education is influenced by the physical infrastructure, namely classrooms, laboratories, library, Information and Communication Technology (ICT) labs, sports and games facilities, etc. Norms laid out by the NCTE is the minimum, focusing only on the minimum functionality. As a matter of tradition and practice, Indian education has not been sensitive to laying down norms that are functional, adequate and aesthetic. This is most obvious in Sarva Shiksha Abhiyan (SSA). The addition of one classroom to the single classroom schools or one more teacher to the one and two teacher schools are at best ad-hoc representing the principle of 'planning for poverty' when right paradigm would have been 'planning for prosperity'. The Central Advisory Board of Education (CABE) in its report on Universalisation of Secondary Education, laid out for the first-time norms of secondary schools beyond the bare minimum[1] (Appendix I).

Fourth Orbit: Quality assurance is also dependent upon financial resources. Although this is often cited as the most important, it is not borne out by facts. Traditionally, funds allocated to education are not fully utilised. The competence of utilisation of funds by the Centre depends very largely upon the competence of the states. Whereas certain states have been able to use funds on time and also effectively, many states fail to do so. Also, current practice of governance of funds in the Centre needs review; allocation to states is far too late for effective utilization of funds within the financial year; the role of the representative of Ministry of Finance in the nodal ministries needs to be examined and recast.

Our important hypothesis is: improved academic process in teacher education is the necessary condition; all others contribute to the sufficiency to achieve the desired level of quality.

On the hindsight of this model is the component analysis of teacher education. For quality assurance in teacher education, it is important to identify each of the micro-components of a teacher education institution.

2.2 Organisational Micro-analysis and Bench Marking

Organisational micro-analysis is an anatomist approach in understanding an organisation. The planning model presented above

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[1] To set infrastructure norms and standards for primary schools in India for the future, the Girl's Primary School (a usual rural government-funded school) in Udang in Howrah district of West Bengal is being developed by the author with one classroom each for each of the four grades, a computer-cum-science lab, a hobby room, a staff room, a store room, kitchen, adequate facilities for toilets, and a multipurpose hall with additional funding beyond the framework of SSA.

identifies various components of a teacher education institution in the four orbits. Orbit 1 deals with academic processes comprising:

- Curriculum development and planning,
- Instructional aids and materials including textbooks,
- Instructional design and teaching learning strategies,
- Internship in teaching,
- Student evaluation, and
- Academic support or co-curricular activities.

Similarly, Orbit 2 comprises various categories of personnel, Orbit 3 comprises infrastructures and Orbit 4 deals with Finance. For quality assurance in teacher education, quality has to be managed and assured on each component.

This is the first stage of organisational microanalysis. In the next stage, each of these components needs to be further subdivided. For example, one of the sub-components of academic processes is instructional design and teaching learning strategy. Learning strategy may comprise creating learning design, and adopting multi-channel blended learning approach. The blended learning approach can be constructed out of a variety of combinations of methods like,

- Lectures,
- Structured presentation,
- Collaborative learning,
- Project-based learning,
- Research and exploration,
- e-learning, etc.

Each one of these can be sub-divided into further smaller components. For example, research on teaching skills indicate that more than 20 skills are involved in delivering an effective classroom lecture; most frequently and extensively used skills are introduction, explanation, illustrating with examples, use of chalkboard and other available aids, asking questions, providing reinforcement, summarising, etc. Again, the proposition is quality of lecture can be assured by ensuring quality of each of these components. Thus, organisational microanalysis is a multistage process (Mukhopadhyay, 2005). Quality assurance in each one of these micro-components will confirm quality assurance in teacher education. There is a debate about the need for integration of quality in various components. Our research and experience indicates that human organisations are equipped with self-organising mechanisms.It automatically integrates various components.

The major challenge in assuring quality in each of these components is the benchmarking. The benchmarking is comparatively easier in the area of physical infrastructure, finance, number and qualifications of human resources, etc. It becomes difficult as one enters into certain processed components particularly teaching learning processes. Nonetheless, there

are certain possibilities. For example, there are a large number of instrument for assessment of classroom process. Such instruments can be utilised for observing and assessing classroom performance of teachers and teacher educators. However, it requires special care and training to use such observation schedules. All those who worked on Flanders Interaction Analysis Category Systems (FIACS) were trained before observing the classrooms. We developed a Classroom Teaching Competence Scale.

Box 1: Classroom Teaching Competence Scale

The scale comprised 18 statements pertaining to classroom-teacher and behaviour.

At the first instance, seven experienced professors observed the classroom proceedings of one teacher on the Classroom Teaching Competence Scale. The scores varied widely depicting the same teacher as 'extraordinary' to 'average' on the same scale depending upon the observer. We, then, developed a set of guidelines indicating kinds of behaviour that should attract low, medium high scores on each of the 18 statements. The variation reduced, not to the extent of acceptability. We decided to train ourselves. After observing each classroom, the seven observers discussed scores on each of the statements. As they moved from one practice session to another, they kept on modifying the guideline – with greater precision of observable behaviour of the teachers in the classroom.

It was only after that, there was a reasonable concurrence of scores among the observers; reducing inter-observer variability.

2.3 Situational Analysis of Teacher Education

There is a large network of teacher education institutions in India. It has expanded significantly in recent years. There were 1669 secondary teacher education institutions in 2005-06 as per Selected Educational Statistics 2005-06 by Ministry of Human Resource Development (HRD). District Institutes of Education and Training (DIETs) number about 600. The number of primary teacher training institutions also grew in number. There are large numbers of pre-primary teacher education institutions without any authenticated data on them. The tremendous expansion is unmistakable.

This surge in quantitative expansion can be attributed to private initiative in education. The private initiative was initially in the area of secondary teacher education. Later on the initiative spread to the training of primary teachers.

There is an interesting contrast between emphasis on teacher education by the government and private initiatives. Government initiative and emphasis during the last two decades, particularly after the National Policy on Education (NPE) 1986, is almost exclusively on quality

improvement in teacher education. The centrally sponsored schemes on teacher education comprising setting up of the DIETs, Colleges of Teacher Education (CTEs) and Institutes of Advance Studies in Education (IASEs) were formulated to upgrade selected teacher education institution at the primary and secondary levels. There are about 200 CTEs and 48 IASEs. It was decided to set up one DIET in each district. Though Government of India has been very supportive of the scheme, all districts of India do not have a DIET because of the decisions of the State government, and also because of the creation of new districts and states. For example, states of Uttar Pradesh, Bihar, Madhya Pradesh were bifurcated; many districts in these states and others where also bifurcated; Government of West Bengal constituted the State Empowered Committee in 1992; however, DIETs have been set up in only a few districts.

The teacher education institutions were called upon to undertake research to find answers to the typical classroom problems. In case of DIETs, practically all DIETs in the country religiously adopted the structure suggested in the MHRD guidelines; there was no structural innovation in any of the DIETs or any state specific innovative feature was added to the functions of the DIETs (Govinda 2001). They mainly concentrated on establishing conventional branches in the teacher training process, and branches such as Planning and Management (P&M), Educational Technology (ET); Work Experience (WE) did not find place.

The State Councils of Educational Research and Training (SCERTs) were set up as the state counterpart of the National Council of Educational Research and Training (NCERT). Unlike the NCERT, very few SCERTs were able to provide leadership in quality management in education in the states. A large majority of the SCERTs are grossly under provided. In many states, SCERTs are used as 'dumping ground' for not-on-demand staff. These state institutions are not structured as academic institutions. Instead of professors and associate or assistant professors, SCERTs are stuffed with joint and deputy directors. These are designed for administrative mind set to lord over academic minds. Research is beyond the reach of these staff. There are structural variations too. In Delhi, all DIETs are component units of SCERT whereas in many states, DIETs are governed by the directorate of education without any reference to the SCERT.

Similar was the case with the CTEs and IASEs. Function of these institutes was expected to provide base-line information about the need of various functionaries of the secondary school system. This component remained weak. The most common activity has been in-service education programmes ranging from short duration awareness or theme-based programmes to 21-day courses. Nonetheless, continuous training and up-gradation of teachers did not happen primarily because of mismatch of number of teachers and teacher educators at the training institutions. Further, training courses so offered could not contextualize inputs to the needs of the teachers in the schools.

Emergence of large number of private teacher education institutions is an important development that has significantly altered the debate on quality of teacher education. Almost all these private institutions are entrepreneurial ventures by the politicians and business houses. These new institutions are largely commercial enterprise where profit is the main motive. The financial turnover as the target is achieved by controlling inputs and charging high fees. The shortage of qualified and quality teacher educators, minimum basic infrastructure, and absence of agenda of quality teacher education have seriously affected quality of education in these institutions. NCTE's efforts to control quality through peer group evaluation (expert committees) face stiff resistance and did not succeed largely due to unfair practices that mutually feed each other. Though there is no established research or survey on this issue, findings of the Yashpal Committee report on the deemed universities may be equally valid for the private teacher education institutions also. NCTE may consider launching a national study on the economy and financial practices of private teacher education institutions in India.

Though Centrally Sponsored Scheme in Teacher Education has been there for more than two decades, its impact is not yet clearly visible. There is no perceptible shift in the quality of in-service and pre-service education programmes in teacher education. There is very little provision and effort, for the removal of obsolescence and capacity building of the teacher educators. There is hardly any innovation for facing the challenge of multi-grade teaching, constructivist learning, school supervision, etc. The quality of research output by the teacher education institutions has not been very encouraging, either. Research continued to be conventional, imitative and stereotype.

In some of the States, teacher educators do not enjoy the status of university academic faculty. They are maintained under School Education Department of the government, demoralising the teacher educators. From the standpoint of quality of teacher education, the scenario is not encouraging. It is rather depressing. It calls for immediate attention. Initiatives of the NCTE in improving quality of teacher education would be welcome.

2.4 From Quality Control to Quality Assurance

The quality management movement began in the 1920s. Frederik Taylor was credited with the creation of scientific management system. Quality control arrived on the scene in early 1930s. "Quality control in its broadest sense, refers to a spectrum of managerial methods for attempting to maintain the quality of manufactured articles at a desired level" (International Encyclopaedia of the Social Sciences, 1979). The basic technique was to identify defective pieces that do not match the product specifications and eliminate them before packaging and marketing. What go into the market are only those that meet quality standards. Obviously, there were scraps and waste increasing the cost of production of the

marketable pieces. Much later, Feignbaum (1983) coined the holistic concept – 'total quality control'.

Quality control also took active support of statistics leading to the development of Statistical Quality Control (SQC) techniques. Statistical Quality Control refers to all those methods that use statistical principles and techniques for the control of quality.

Quality assurance is a later development in quality management. Here the emphasis is on assurance rather than on detection and elimination of products that do not match the product definition.

TQM is a further development on quality assurance approach. Dale and Plunkett (1990) reviewed quality control, quality assurance and TQM, preceded by quality inspection in a hierarchic model of quality management (Table 1).

Table 1: Evolution of Quality Management

Quality Management Approaches	Activities
Total Quality Management	• Involves suppliers and customers • Aims for continuous improvement • Concerns products and processes • Responsibility with all workers • Delivered through team work
Quality Assurance	• Use of statistical process control • Emphasis on prevention • External accreditation • Delegated involvement • Audit of quality schemes • Cause and effect analysis
Quality Control	• Concerned with product testing • Responsibility with supervisors • Limited quality criteria • Some self-inspection • Paper-based system
Quality Inspection	• Post-production review • Reworking • Rejection • Control of work force • Limited to physical products

Source: Dale and Plunkett, 1990

As can be seen, quality management has steadily evolved from quality inspection to quality management. Major shift is from external control to internal capacities. The common element in all the four stages is quality assessment. Unlike life style products, quality assessment is far more complex in cases of services and still more in educational services.

Quality Assurance involves designing systems to ensure quality before the production/event (Fidler, 1996). Quality assurance is a strategy to prevent production of wasteful defective pieces. Oakland (1988) identified five stages or attributes of quality assurance mechanism. These are:

- Dealing with quality planning;
- Providing quality advice and expertise;
- Training of personnel;
- Providing inward goods, process and finished products appraisal methodology; and
- Analyzing customer's complaints, warranty claims and product liability cases.

A significant emphasis in quality assurance is on the quality of the product design – an advance prototyping of the product. Equal emphasis has been laid on the quality of translating the design into product conforming to the original design. The product is the outcome of interaction of input and processes. The quality assurance mechanism ensures right quality of input – raw material and equipment and rigorous process quality, so that product quality is ensured. The specifications of raw material, equipment and process go a long way to assure quality. This has been defined as mechanism for ensuring 'zero-defects' and 'right first time, right every time' product.

Quality assurance is a systemic process. Since the system comprises inputs, process and outputs, quality assurance in teacher education must ensure quality in all the three components, although quality of teacher education programme is ultimately evaluated by quality of the graduates from teacher education institutions. The output oriented approach to quality management resembles quality control systems where the products that do not satisfy the quality criteria are rejected. This is not possible in teacher education. Those who fail may resemble rejection, but what about those who succeed in first, second and third divisions? Who is to be accepted, and who rejected?

There are enough empirical evidences that all candidates can succeed in first division (mastery learning). This is possible only by ensuring quality input and quality processes in teacher education.

Further, teacher education programmes, beyond what is formally taught to the trainees, influences the trainees through incidental learning that they experience. These experiences influence perception of quality. There is a need to build mechanisms of quality assurance. The starting point is quality assessment.

2.5 Tools and Techniques of Quality Assessment

Institutional evaluation serves multiple purposes. It is an essential requirement for organisational diagnosis. It is also used for benchmarking educational institutions. For example, in ranking top 100 universities in

the world, institutional evaluation is carried out against certain criteria and benchmarked. Similarly, criteria are also used in ranking the management institutions in India by the business magazines. Since organisational diagnosis is a prerequisite of quality assurance, institutional evaluation of teacher education institutions is necessary. Institutional evaluation is also necessary for ranking teacher education institutions. However, the mechanism and methods of institutional evaluation take different mechanisms for organisational diagnosis and institutional ranking. Since the purpose of organisational diagnosis is to design development intervention, it must be participative involving as many members of the institution as possible. The participative process, however, for greater effectiveness, must be structured.

There are several inter-related issues pertaining to institutional assessment. The major ones are parameters of assessment, tools of assessment, participants in the assessment exercise, quantitative versus qualitative analysis, use of assessment data.

Parameters of Assessment

There is a wide divergence of opinion as to what constitutes quality. Boyer (1996) proposed (a) Building a sense of community within that institution; (b) Centrality of language – the study and use of symbols; (c) Curriculum with coherence; (d) Creating a climate for creative learning—a place for active, not passive learning, a place where people learn to be creative, not just conforming where they learn to cooperate, as well as compete; and (e) creating climate that affirms the building of character for every student as five pivots of the quality institution. Vanvught and Westerheijden (1993) proposed another set of five elements for quality assessment, namely, i) Meta-level coordinating body; ii) Self-evaluation undertaken within institutions; iii) External peer review; iv) Publication of reports; and v) An indirect link to funding.

Sallis (1996) presented an interesting comparison between quality educational institutions and their counterparts (Table 2).

During one of my workshops on quality management in educational institutions, the participating senior educational administrators identified five major parameters of quality. These are:

- Discipline and punctuality of students and staff,
- Cleanliness and maintenance of the campus,
- Excellence in academic achievement,
- Excellence in non-academic achievement, and
- Organisational climate and satisfaction of the customers.

Emphases in all the five components are on the outcomes; excellence in academic and non-academic activities, cleanliness and punctuality are tangible and overt, whereas outcome in discipline, and job satisfaction are largely intangible and covert. Thus, certain dimensions are prerequisites

Table 2: Comparison between Quality and average Institution

Quality institution	Ordinary Average institution
Customer focused	Focused an internal needs
Focused on preventing problems	Focused on detecting problems
Invest in people	Is not systematic in its approach to staff development
Has a strategy for quality	Lacks a strategic quality vision
Treats complaints as an opportunity to learn	Treats complaints as nuisances
Has defined the quality characteristics for all areas of the organisation	Is vague about quality standards
Has a quality policy and plan Senior management is leading quality	Has no quality plan Management role seen as one of control
Improvement process involves everybody	Only the management team is involved
Has a quality facilitator to lead the improvement process	No quality facilitator
People seemed to create quality; creativity encouraged	Process and rules all-important
Clear about roles and responsibilities	Vague about roles and responsibilities
Clear evaluation strategies	No systematic evaluation strategy
Sees quality as a means to improve customer satisfaction	Sees quality as a means to cut costs
Plans long-term	Plans short-term
Sees quality as a part of the culture	Sees quality as another troublesome initiative
Developed quality in line with its own strategic imperatives	Examines quality to meet the demands of external agencies
Has a distinctive mission	Has no distinctive mission
Treats colleagues as customers	Has a hierarchical culture

for quality and certain others are manifest forms of quality. From such a stance, quality is built on certain foundations, which are as important, if not more, as the known indicators of quality. Hence the first stage is to clearly define the indicators of quality, as far as possible, in measurable terms. The quality of the trainees, teacher educators, (leadership qualities of the) principal/head of department, physical infrastructure, instructional resources, and financial resources are sound examples of inputs for quality (Mukhopadhyay, 2005).

On the basis of our research in various Indian educational institutions including teacher education institutions, we identified 11 different

dimensions that can help determine the overall quality of an educational institution. These are:

- Leadership;
- Teacher (Teacher Educator) quality – preparation, competence and commitment;
- Linkage and interface with state, national and international institutions e.g. SCERT, SIET, NUEPA, NCERT, UNESCO, UNICEF, universities abroad, professional societies of teacher education and allied disciplines, etc.
- Student-Teachers – academic and non-academic quality;
- Co-curricular activities – non-scholastic areas;
- Teaching – quality of instruction;
- Office management – support services;
- Relationships – quality of life in the institution;
- Material resources – instructional support;
- Examination – purposefulness and methodology; and
- Job satisfaction.

Box 2: Staff Perception Exercise

This is a staff perception exercise on a total quality management project in a teacher education department. There were seven staff members – all energetic, enthusiastic and duly qualified.

Before initiating the SWOT exercise in the first workshop, question was raised about whether they knew their department enough well. Obvious answer was 'yes'. "We have spent years together in this department; and some of us have actually lived our life here. Obviously, we know every bit of it". The staff members were then asked to write an essay on their Department in 300 to 500 words. Purpose of the writing is to introduce the Department to an outsider. All of them took the exercise with lot of enthusiasm since they 'knew their department very well'. In about half an hour, they submitted their essays.

Each participant was asked to read out her essay for others' benefit. As each one of them read out, they realised the difference and themselves expressed their amusement on the difference of perception of the same department to the extent they referred to six blind people observing an elephant.

2.6 Tools and Techniques of Quality Assessment

Whatever be the dimension(s), assessment requires a structured tool. It is not unusual to find a strong perception among the faculty and the non-faculty that they know their institution. In reality, what they have is a perception that may vary widely.

In order to carry out institutional evaluation, it is necessary to explore

ways and techniques for bringing in objectivity, convergence and commonality in the perceptions as much as possible. This can be achieved to a great extent by using certain scientifically developed instrument of institutional evaluation. There are several such instruments. However, they are not necessarily tailor made to suit the needs of the teacher education institution.

One of the most comprehensive instruments of institutional evaluation is MIAS comprising :

- Data and Information Blank
- Mukhopadhyay's Institutional Profile Questionnaire (MIPQ) largely meant for teachers as respondents,
- Principal's Questionnaire
- Students' Questionnaire
- Parents' Questionnaire

MIPQ has been developed to assess the 11 areas mentioned above. MIPQ has been used by large number of educational institutions for generating institutional profiles. It has also been used by large number of doctoral students conducting research on quality management. The main assumptions behind this instrument are two – firstly, no academic institution is either good or bad; secondly, every institution has strengths and weaknesses. For organisational diagnosis it is more important to find strengths and weaknesses rather than classifying an institution as good or bad. Although MIPQ is largely used to elicit teachers' perception, it has also been administered on the principals and non-academic staff. It generates cumulative scores on each of the 11 items resulting into an organisational profile. Here is a sample.

MIPQ was administered to the teaching staff of an institution. Average scores on each of the 11 areas are shown in Table 3. The scores were then plotted on a graph that yielded the institutional profile (Figure 2).

Figure 2 : Profile of an Institution

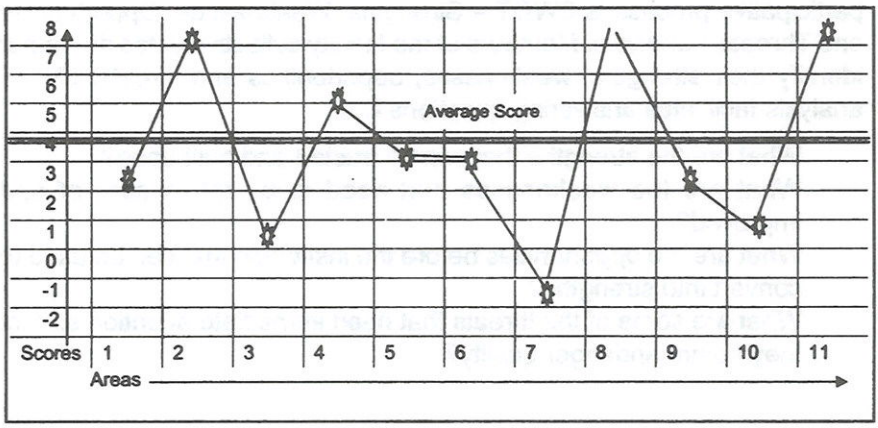


Table 3: Average scores in sub-areas of MIPQ

S.No.	Areas	Scores 3.75 –	Scores 3.74 +
1	Principal as leader	2.50	s
2	Teacher quality		7.25
3	Linkage	0.52	
4	Student quality		6.02
5	Co-curricular activities	3.25	
6	Teaching	3.00	
7	Office	-0.53	
8	Relations		7.95
9	Resources	2.44	
10	Examination	0.90	
11	Satisfaction		7.68
	Average across areas	3.75	

The profile of the institute provides an opportunity to identify the strengths and weaknesses. Generally speaking, whichever area, the score is higher than the average, indicates strength, and whichever area is below the average mark indicates the weakness. In the instant case, teacher quality, relationships and satisfaction on the job are the unmistakable areas of strength, whereas linkage with other agencies and institutions, office management and management of examinations are the weakest areas. On the basis of this profile, it is possible for the institution to plan development intervention.

Other instruments provide an opportunity to assess the quality of the institution as perceived by the principal, students and parents.

Another important technique of institutional evaluation through participative process is SWOT – Strengths, Weaknesses, Opportunities and Threats – analysis. Members of the faculty collectively decide, rather identify their strengths, weaknesses, opportunities and threats. SWOT analysis facilitates answering questions like:

What are the strengths that can be trusted and built upon?

What are the weaknesses that need to be taken care of and improved?

What are the opportunities before the institution that can be used to convert into strengths?

What are some of the threats that need immediate attention so that they do not endanger quality?

Since SWOT analysis is open and participative, often a few articulate and assertive members dominate the discussion and the diagnosis. It is not necessary that the articulate and assertive ones are necessarily rich with new ideas or critical and analytical thinking. Capable, but silent, members do not contribute. In order to overcome this deficiency, SWOT analysis has been successfully carried out on the basis of the organisational profile developed through MIPQ.

The MIAS is an example. It is more generic. It will be better to adapt MIAS or such other tools to suit the special features of teacher education institutions. NCTE would do well to develop tools and techniques of evaluating especially designed for teacher education institutions.

Participants

Institutional evaluation and assessment is not common among the teacher education institutions; what matters is the principal's perception. As mentioned earlier, to get a more comprehensive and realistic view of quality of a teacher education institution, the institutional evaluation must involve all the stakeholders namely, management, Principal, academic staff, non-academic staff, and the trainees. This can provide a 360° appraisal of a teacher education institution.

The objective of institutional evaluation is organisational diagnosis. People in the leadership position normally avoid any comprehensive assessment because they fear attribution of organisational weaknesses to themselves. This is neither true nor necessary. Institutional assessment brings to surface many known but not articulated realities; it also unveils many unknown but important elements in the institution. This unfolding of the tacit institutional knowledge is necessary for organisational diagnosis and quality assurance in teacher education. Hence, for quality assurance, every teacher education institution should undertake periodic participative internal evaluation.

The framework of evaluation presented so far is for internal and for developing organisational profile for diagnosing strengths and weaknesses and finding interventions to improve the quality of the institution. This is an in-house participatory process which do not necessarily allow inter-institutional comparison because respondents are different. From a larger national perspective it may be necessary to evaluate teacher education institutions for quality benchmarking and ranking. This can be better achieved through expert evaluation based on certain basic criteria that are objective, measurable and predictable.

Nonetheless, teacher education institutions must undertake periodic self-evaluation exercises seriously beginning with identifying and/or developing instruments of evaluation. Results of such evaluation can be submitted to the external evaluation team for validating and taking it further.

Box 3: Institutional Evaluation

Way back in 1980-81, we at Technical Teachers Training Institute, Bhopal undertook a project on Institutional Self-evaluation for polytechnic institutions. A detailed instrument of evaluation was developed capturing quantitative information, observation data and a host of other qualitative information, perceptions, etc. This set of instruments were sent in advance to the polytechnics before the visit of the expert committee. The expert committee comprised principals of other polytechnics. The polytechnics used to collect relevant data and fill up the information blanks, questionnaires, etc.

The expert committee used to visit after a few days when the polytechnic would have filled up all the forms. During the visit, the expert committee verified the data, observed a physical infrastructure, classroom teaching, laboratory practices, workshop activities, etc.

The expert committee would then discuss with the members of the staff. The discussion was used to find the convergence between the data and information generated by the polytechnic and the expert committee so that the assessment becomes acceptable to the faculty. This was necessary for using the assessment for institution building. The main purpose of the assessment is to create the basis for quality improvement in the polytechnic.

2.7 Methods and Techniques of Quality Improvement and Management

Quality assessment and quality management are two different, though inter-related, activities. Quality assessment may help identifying the strengths and weaknesses of an institution, but is not enough a tool for quality management. There are several techniques of quality management such as MBO, Quality Circle, Total Quality Management, Six Sigma, etc. All these techniques were originally designed, experimented and applied in industry and business organizations. Since all these techniques revolve around human (employee) efficiency and effectiveness, these are valid and effective in human organizations. Education in general and teacher education in particular being human intensive organizations, these quality management techniques are applicable.

But before we deliberate upon some of the established techniques of quality management, let us take a look at the essence of teacher education.

Primary business of teacher education programmes is transacting science of education so that teacher trainees may practice scientific techniques of educating the children in the school. What are those scientific techniques? These are:

- Understanding the very foundations of education and the role of teachers in emerging Indian society,
- Skills of curriculum development and planning,

- Understanding of human psychology – intelligence, personality, learning, etc.,
- Knowledge and skills of instructional design, teaching-learning strategies and transacting curriculum,
- Skills of student evaluation,
- Understanding and application of skills of content pedagogy methods of teaching various school subjects
- Skills of teaching practices, etc.

It is safe to hypothesise that if a teacher trained in a teacher education programme actually practices all the aspects of the science of education, it will improve the quality of school education. Is this hypothesis equally valid for the programme of teacher education itself? It is possible to assert that the science of curriculum development and planning, instructional design and planning instructional processes, application of human psychology, student evaluation, etc. are equally applicable to teacher education. In other words, one of the important possibilities of improving quality of teacher education is practising the science taught to the trainees with minor adjustments, e.g., andragogical methods instead of pedagogical ones. This, however, does not happen in large majority of teacher education institutions. There is a wide gap between the preaching and the practice in teacher education. For example, constructivism or educational technology is part of teacher education curriculum. Instead of practising constructivism, majority of the teacher educators resort to conventional lecture; same is true for educational technology. Teacher educators teach how to teach, provide demonstration lessons which they rarely practise in their own classrooms. This contradiction costs quality. An important method of quality assurance in teacher education is 'walking the talk' (Mukhopadhyay, 2006).

ISO 9000 is gaining increasing popularity in education. As the competition is getting tougher, many private schools and colleges have resorted to ISO 9000 certification. In order to meet the criteria of quality specified in ISO 9000, the educational institutions work for a period between six months to one year before submitting itself to examination by the panel of evaluators. It sets the organisation in a structured framework against a set of quality benchmarks. However, since ISO 9000 is a terminal certifying concept and practice without the necessary emphasis on development of the process capabilities, a large majority of the educational institutions with ISO 9000 certification relapse back to the original level. Sustainability of quality is under question.

Six Sigma is comparatively a recent development. Once again, its origin and location are still in the industrial and business organisations. Its applicability in education has not yet been adequately explored though it has significant potential for quality assessment, if not quality assurance.

Management by Objectives was pioneered by Odiorne and Humble. Basic idea was to set a few organizational objectives and managing the

organization with reference to the goals. These goals were set through a participative process. It became popular in late 1960s and 1970s but did not catch the imagination of many the way Quality Circle did. Beginning with Ishikawa's 'reading cycle', as he wrote in Fundamentals of Quality Control journal, '*These book reading groups soon began to want to change in more than theoretical study and so became problem-solving groups. From here individual form and encourage their staff to join in and quality circles are born'.*

Quality circle and TQM had been extensively used all over the world for quality management. Both are process oriented approaches emphasising on developing process capability of the organisation for self renewal.

Quality Circle

Origin of Quality Circle in Japan was to reconstruct quality of its products after the Second World War to face the competitive market. Focus was on quality improvement through optimisation of collective intellectual contribution of members of the organization. It indicated that key to success of sustainable quality is in participative management involving people in the organization.

Quality Circle approach to quality management has survived the test of time. 75,000 circles were registered with Japanese Union of Scientists and Engineers (JUSE) in mid-1970s; according to other estimates, 10 times more such Circles were active, though not registered (Robson, 1985). The basic objective of Quality Circle is to propose creative solutions to existing problems based on a detailed problem analysis and cause-and-effect relationships of the problems. Hence, it requires intellectual investment of critical and creative thinking. For us, Quality Circle is an 'endeavour in solving organisational problems and innovate through collective and participative creativity' (Mukhopadhyay, 2008).

Quality Circle as a method of quality management in education has been used in different levels of education. One historic Quality Circle effort was made by five school students that came to be known as 'Jai Jagat'. Jai Jagat Circle's primary objective was to solve the problem of how to concentrate on studies. Quality Circle has been used in technical education institutions, polytechnics, schools, colleges and teacher education institutions. Deepa Sharma's doctoral dissertation on Quality Circle is an interesting and important experiment in India (Sharma and Kamath, 2006).

Quality circles comprise a small group of members who allocate within themselves roles of a coordinator, facilitator, leader and deputy leader, member and non-members. Whereas the leader provides leadership in the process management and creates impact of the Quality Circle, Coordinator is the key person in anchoring the Quality Circle.

Quality Circles do not require much funds; it requires commitment of certain basic resources. First and foremost is the commitment of time – about one hour a week – of the leader, coordinator, deputy leader,

facilitators and all other members of the Quality Circle. Hindsight of the time is the cost of the time that the institution spends by sparing the staff to participate in Quality Circles. The second is the financial resources, though marginal like expenses on electricity, refreshments, and other expenditures associated with Quality Circle meetings. The third resource requirement pertains to resources required to implement the decisions and suggestions recommended by Quality Circles.

This basic principle of 'human intensive approach to quality' has been transferred to education. It should fit in the educational institutions rather easily since educational institutions are human intensive organizations. Emphasis here is on using Quality Circle for improvement of quality at low material costs, and to create a highly human intensive alternative to quality management.

Quality Circle focuses on selected problems for quality in the organisation. The same organisation can have more than one Quality Circle, each one focusing on one area. An innovative practice was done in Technical Teachers Training Institute, Bhopal. The entire faculty was divided into, according to their own choices, interdisciplinary taskforces. At the same time, there were several taskforces on curriculum development and planning, evaluation, audiovisual aids and media, educational research, educational management, etc. Main agenda of all the task forces were quality improvement and sustenance in their respective areas through collective efforts. This was an official activity, hence time was spared; office premises were available for meetings; funds were available for meeting with expenses for task force meetings; recommendations were implemented by the Institute authority.

Quality Circle is 'knowledge' driven. Higher education institutions are knowledge enterprises – creating, preserving, and promoting knowledge. There are more knowledge workers in teacher education institutions than manual workers. Strategically steered, Quality Circle should find easier access in teacher education institutions and competent implementation.

Total Quality Management

Total Quality Management as a concept and practice is credited to Deming, Juran and Crosby. Although it emerged primarily in the fields of industry and business organisation in the post world war reconstruction of Japan, Deming claimed that total quality management is equally applicable in government, health and education. There have been considerable research, experiment and efforts to implement total quality management in education, both at the systems level as well as at the institutional level (Frazier 1997, Mukhopadhyay 2005, Sallis 2002, and others). Such experiments have been done in various countries including India with schools, colleges, teacher education institutions. The Ministry of Human Resource Development, Government of India sponsored a project to NIEPA on training principals of all DIETs on total quality management on the basis of the book, Total Quality Management in Education (Mukhopadhyay, 2001).

Box 4: Training in TQM for DIETs

The Government of India, Ministry of HRD sponsored a project to NIEPA on training all the Principals of DIETs in the country on total quality management in education based on the book Total Quality Management in Education by the author. The book was available in English and Hindi, both published by NIEPA in 2001. The author was the Project Director. The training was provided over a period of nine months comprising following steps.

1. Professors from 20 different university departments of education from different parts of the country were brought to a five-day workshop in NIEPA. They were all trained in total quality management in education based on the book mentioned above. They were all provided a copy of the book. These professors were developed to facilitate field level implementation of the project as resource persons/mentors.
2. SCERTs and/or Directorate of Education in each state were involved in the project implementation in their respective states.
3. Principals of the DIETs were presented with a copy of the book. Copies of the book were sent in advance to the state institutions and departments that forwarded to the DIETs. Principals were expected to study the book during the next three months. They were also informed about their mentor/facilitator in the state – one of the university professors mentioned above and involved in the project.
4. After three months, the principals were called upon to attend a programme through one way video and two way audio conferencing. We booked the IGNOU Studio and its Regional Centers. Studio was the teaching end and Regional Centers served as the learning end. One of the professors was present in each of the regional centers. We conducted the sessions from IGNOU end; participants not only watched but also interacted with us through fax, phone, and e-mail. Sessions were not only interactive, but also involved problem-solving exercises responded through fax and telephone. The delivery from the IGNOU studio was restricted to the first half of the day; in the second half, the professor present in the Regional Centre conducted the face-to-face workshop with the participants.
5. During the next three to four months, participants undertook an action research project on total quality management in their respective institutions. They could consult their mentors in the state. They were to submit a project report at the end of the stipulated period.
6. There was a follow-up one-way video two-way audio conferencing for one week to discuss the project reports. Again, IGNOU Studio and its Regional Centers were hired for the conferencing. A few reports were identified for presentation from the IGNOU Studio. The rest of the reports were presented from their respective ends.
7. The only exception was Tamil Nadu. SCERT organized a workshop of all the principals of Tamil Nadu DIETs. In this workshop, the reports were presented and discussed. In their enthusiasm, Minister of Education was invited to inaugurate the workshop.

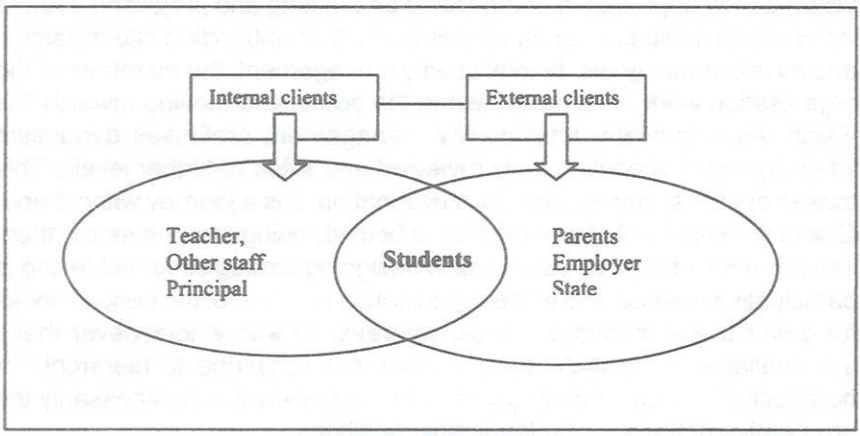
The majority of the protagonist of total quality management adopted vision-based approach. It emphasized on creating and projecting a future vision of the institution. Such visions are further unbundled into missions, and missions into goals. In total quality management, the members of the organisation work towards achieving the goals, and moving towards the vision. As a concept, total quality management professes dynamism whereby vision is continuously reviewed and sifted to higher levels. This makes quality a journey, and not a destination. It is a journey without end. One of the important characteristics of both visioning and converting them into missions and goals as well as in designing strategies for achieving is participative method. Here, the organisation is in the focus; hence it looks for creative and innovative ideas, wherever or with whomsoever these are available. Essentially then, it does not subscribe to hierarchic or bureaucratic model of management. For, creativity is not necessarily the prerogative of those in the leadership positions.

Another important landmark concept in total quality management is customer orientation. Hallmark is customer satisfaction. Some total quality experts use the expression, 'beyond satisfaction'. This brings us to two issues. One is the customer and another is the satisfaction. Since it began in the industry and business organisations, it was easy to define a customer. Customers were consumers of the lifestyle products. It is also possible to define in certain service sectors, e.g. postal services. It is relatively difficult in education. The question is: who is the customer?

Customer satisfaction is a relative term. A product that satisfies one customer or a class of customers does not satisfy another class of customers because customers have their own set of criteria of quality of the products they want to buy. For example, when it comes to buying a pen, one group of customers will be satisfied with functionality; the pen writes well, lasts long, is sturdy and cheap. Another group of customers may not bother about the price, sturdiness or long lasting factor. Their preferences are the finish and the look of the pen, uniqueness, rare brand reputation, e.g., Sheffers. There are many different ways of interpreting the concept of 'beyond satisfaction'. The common commercial approach to customer satisfaction is –'25% free', 'buy two get one free', etc. This stereotypical concept of customer focus and satisfaction do not easily fit in education.

In education in general, and teacher education in particular, who is the client? If trained teachers are the 'products', government and schools that hire are the clients. If teacher education institutions are providing education and the trainees are buying, trainees are the customers. If government or management of teacher education institutions hire the services of principal, teachers and non-teaching staff, the institute personnel become client of institute services. Hence in education including teacher education, there are internal and external clients (Figure 3).

Figure 3: Internal and External Clients of Education Programmes

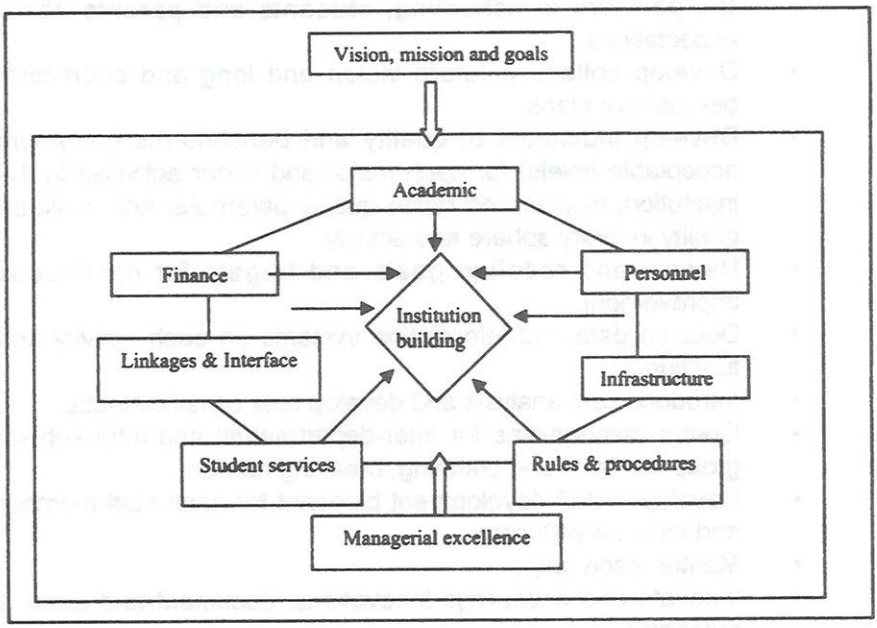


Thus, application of the conventional customer satisfaction model of total quality management in education is questionable. Since education professes creation of a learning community, the teacher educators and trainees are partners in the same learning game. Important point is: a good programme of teacher education offered effectively in a college of education satisfies the trainees and the teacher educators ; when they move out and join the schools, they satisfy the schools and their students, parents and the management alike. Because of this, performance of students in the schools improves creating satisfaction of the system. Hence, it is a spiraling process. Good quality teacher education move satisfaction from one level to another as much as poor quality teacher education spirals the process of dissatisfaction.

Reverting back to the vision-based approach to total quality management in education, we realized during our research that vision is a function of creativity, imagining what does not exist; it is like seeing a painting on a new blank canvas; listening to the music (tune) in a lyric. A more down to earth and implementable method is Organizational Micro-analysis (Mukhopadhyay 2005). In this approach, the smallest component of structure, function and people of a teacher education institution is identified. Quality assurance is effected by assuring quality of each component (Figure 4).

From the angle of quality and change management, every educational institution have eight functional domains, namely academic management, human resource management, infrastructure management, Finance management, network management, student services management, office management, and managerial excellence and leadership. Management of change and role of ICT in quality management are integrated into all these eight areas. Managing quality in each area will lead to total quality management of the institution. Although it appears to be another anatomical and analytical approach, it works. Educational institutions as social

Figure 4: Inter-related sub-systems of an educational institution



organisations have self-organizing mechanism. They integrate development in one area with another as they practise quality management. This is the first level microanalysis. The multi-stage micro-analyses have been mentioned earlier in the Planning Model of Quality Assurance.

Components arrived through organisational microanalysis are far more concrete for teachers to understand, appreciate, and develop as skills. Total quality management from this new and practical perspective emphasizes on developing quality benchmarks for each of these components and moving towards achieving the quality to the predefined specifications. Such specifications are participative, collectively self-defined. They are not imposed from the top. For, the ownership of quality management is an important requirement for total quality management.

Deming, Juran and Crosby have offered certain cardinal principles of total quality management. On the basis of research and experimentation in India, 15 cardinal principles of applying total quality management for quality assurance in educational institutions including teacher education institutions were identified (Mukhopadhyay 2005). These are:

- Nurture a vibrant familial ambience in institution.
- Ensure pro-active participation of all the partners in institution: parents, students, teachers, non-teaching staff, persons and organisations interested in the institution.
- Create an awareness that schooling (read it as institutionalized education) is a holistic living experience.

- Create mechanisms for the expression of mutual concern among the partners in schooling, students and parents about expectations.
- Develop collective future vision and long and short-term perspective plans.
- Develop indicators of quality and benchmarks (minimum acceptable levels) for each major and minor activities in the institution, to plan and refine quality parameter and insist on quality in every sphere and activity.
- Review and redefine goals and targets for continuous improvement.
- Develop data and information systems on each activity and function.
- Introduce cost analysis and develop cost consciousness.
- Create mechanisms for inter-departmental and inter-subject group dialogue and planning, breaking barriers.
- Develop a staff development blueprint for each staff member and execute with care.
- Mentor leadership.
- Innovate and encourage innovations; document and discuss outcomes.
- Celebrate organizational successes and failures.

Quality management, as mentioned earlier, is a journey without an end. It is not a destination, primarily because the quality parameters change over time due to several developments in the knowledge systems and the environment. Hence, any approach of quality management that is externally prescribed and control oriented is unlikely to be successful in quality assurance. For quality assurance, emphasis has to be on development of the process capability of the institution. Only that can ensure self renewal and continuous quest for quality. Quality Circle and Total Quality Management provide significant opportunity of developing process capability and sustainability of the quality journey in the institutions of teacher education.

Just as prescription does not cure a patient, knowledge of science of quality management does not change the quality of teacher education. Quality assurance is not automatic either. It requires deliberate planned effort. Teacher education institutions would do well to adopt Total Quality Management or Quality Circle for quality assurance in teacher education. Of course, teacher educators and people in leadership positions in teacher education institutions need training in quality management.

2.8 Sustaining Quality: Strategic Planning

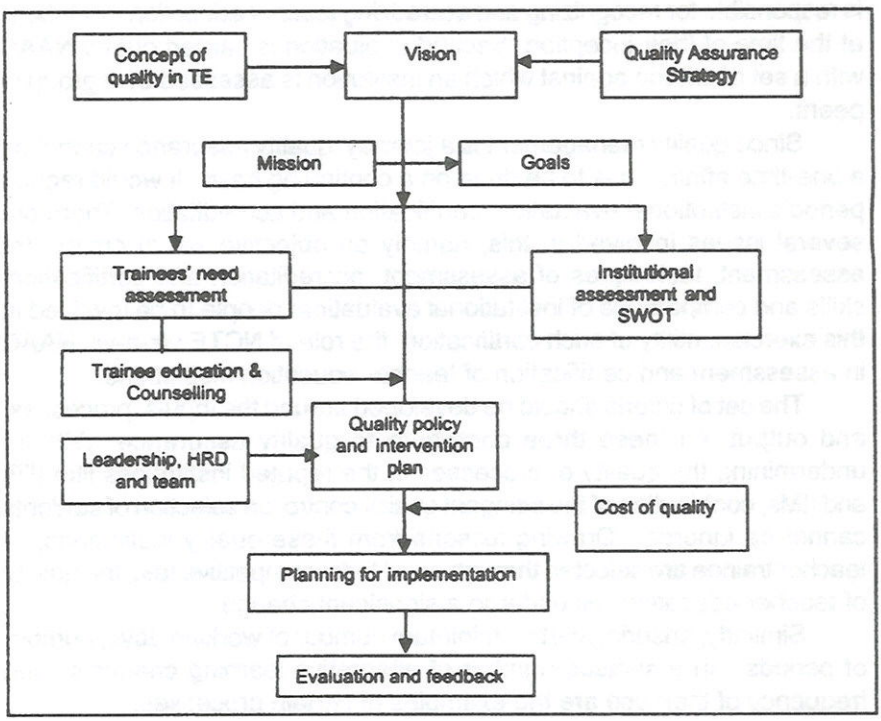
Dynamism is built into the quest for quality. Quality tomorrow has to be better than today. In a competitive framework, it means relativity of quality among the institutions. For example, Harvard University ranks on

the Top 100 universities in the world. First implication is Harvard of 2009 has to be better than Harvard of 2008. If Harvard were to sit on its laurels, the day won't be far off when it would lose its rank to Oxford or Yale or Stanford. All of these universities are continuously moving forward in quality on their own initiative and instance. The intricate and complex question is building quality and staying there – sustainability of quality.

Since quality is dynamic, sustainability cannot be achieved by maintaining quality, even at a high but static level. Sustainability can be achieved only by developing mechanism for continuous change and quality improvement; developing a mechanism of adjusting and gearing up with shifting goals. That needs strategic planning for quality management.

Strategic planning seemed to have its inception or origin in the science of wars where the only objective and target is winning at the least human cost was non-negotiable. Over a period, it has emerged as planning actions and activities to achieve goals and targets of an organisation or a project. Several strategic plan models have been proposed by different authors. Murgatroyd and Morgan (1993) produced a framework within which planning parameters can be fitted in. Kaufman (1992) proposed a four stage model for strategic planning comprising scooping, data collection, planning, and implementing and evaluating. Mukhopadhyay (2005) proposed a strategic plan model comprising several steps. (Figure 5).

Figure 5: Strategic Plan Model for Quality Management
(adapted from Mukhopadhyay, 2005)



For developing a mechanism of sustainable quality in teacher education, all these steps and in relationships to each other, are extremely important. As a practical exercise, response to the following questions will provide the meat for planning for implementation. Colleges and institutes of education may try this out and create their own strategic plans including planning for implementation (Table 3).

Strategic planning can be approached theoretically. Strategic plan can also be developed in a staff workshop, preferably facilitated by an expert. In absence of knowledgeable experts on strategic planning, the table above can be of great assistance. Step-by-step answering the questions will facilitate generating a strategic plan for quality improvement and management.

Management development or scientific management is not a hallmark of teacher education. Heads of departments or principals of colleges of education are designated by seniority. Management is seen as extension of teaching rather than a specialised function. For quality assurance in teacher education, it will be necessary to provide training in quality management including strategic planning to the principals of colleges of education and heads of university departments of education.

2.9 Organisational Mechanism of Quality Assurance : Lessons from NAAC

As of now, there are two sets of institutional evaluation of teacher education institutions. One such evaluation is provided by the NCTE that is responsible for recognizing and accrediting teacher education institutions at the time of their inception. Second evaluation is carried out by NAAC with a set of criteria against which an institution is assessed by a group of peers.

Since quality management is a journey, quality assurance cannot be a one-time affair; it has to be done on a continuing basis. It would require periodic institutional evaluation, certification and accreditation. There are several issues involved in this, namely an objective set of criteria for assessment; techniques of assessment, accreditation and certification; skills and competence of institutional evaluation; people to be involved in this exercise; utility of such certification; the role of NCTE vis-à-vis NAAC in assessment and certification of teacher education institutions.

The set of criteria should be developed around the inputs, processes, and output. All these three contribute to quality assurance. Without undermining the quality of processes in the reputed institutions like IITs and IIMs, contribution of the stringent quality control on selection of students cannot be ignored. Drawing lessons from these quality institutions, if teacher trainee are selected through an all India competitive test, the quality of teacher education will undergo a significant change.

Similarly, ensuring certain minimum number of working days, number of periods in a subject, number of alternative learning channels and frequency of their use are the examples of certain processes.

Table 3: Strategic Planning Questions

Steps in strategic planning	Indicators of success	Activities	Resources	Monitoring
Vision, mission and goals	There is a vision statement; There are mission statements derived out of the vision statement; There are stated goals that are derived from the mission statements and are achievable.	What are the activities to be undertaken for creating the vision statement? How will the vision be unbundled into missions and goals?	What financial resources are required? What expert resources are required?	How would one monitor the process of development of vision, mission, etc? How would you ensure the quality of vision, mission, etc.; their worth-whileness and achievability, within given resources and facility?
Trainee need assessment and client education	There is a document on trainee need assessment; there is a report on counselling of the trainees.	How would the trainees' need be assessed? How would the counselling be organised?	What are the various financial resources that are required? What expertise is required to carry out learners' need assessment and counselling?	How would you ensure timely completion of learners' need assessment and counselling? How would you ensure the quality and reliability of the learners need assessment?
Institutional assessment and SWOT	There is a profile of the institution developed collectively on the basis of some structured schedule; there is an agreed upon SWOT Sheet developed through staff participation.	Which tools or tests would you use to assess your institution? Who should be involved in assessing the institution? How would you develop a SWOT sheet?	What financial resources are required? Where would you derive such resources from?	How would you ensure timely accomplishment of the tasks? How would you ensure quality and acceptability of the assessment and organisational diagnosis?

(Contd....)

Quality Policy and Intervention Plan	There is a Quality Policy statement, e.g., standards to be achieved. The Quality Policy statement is displayed prominently and known to every member of the institution; there is a well defined set of activities collectively identified to translate the Quality Policy of the institution.	How would you develop your Quality Policy? How would you develop Intervention Plans and ensure that these contribute to the achievement of the Quality Policy?	What kind of expertise would you need, and where will you get it from? What financial resources are required? What kind of expertise is required to facilitate statement of Quality Policy and Intervention Planning?	How would you ensure timely outcome and quality of this exercise?
Cost of quality	There is a cost analysis sheet indicating available budget for various quality management initiatives; There is an assessment of return on investment on each component of quality management Initiative.	How would you calculate the difference in contribution of investment on quality? How would you estimate the financial requirements for implementing the planned interventions?	How much time do you need to assess the differential contribution of investments from quality management initiatives? Who will carry out the cost studies?	How would you ensure that intervention plans contribute to fructifying the Quality Policy?
Planning for implementation	There is an agreed upon PERT chart for implementing the strategic plan; There is a document identifying risk areas and contingency plans.	How would you develop the plan of implementation? How would you identify the factors that can facilitate and obstruct implementing the strategic plans?	Do you have a document identifying the areas of risks?	Do you have a detailed strategy paper of monitoring and mentoring implementation of the strategic plan? Who is responsible for monitoring?

(Contd....)

Evaluation and feedback	There is a documented plan for evaluating activities; and procedures of providing feedback; and strategies for midcourse collection has been clearly spelt out.	What tools and techniques would you use for evaluation and feedback? What would be the frequency of such evaluation? How would you ensure that evaluation is objective, and not influenced by self-fulfilling prophecies?	What financial, human and time resources are required to evaluate and provide feed-back?	Do you have a schedule for evaluation? How would you ensure that evaluation is neither fault finding nor self-fulfilling prophecy?

The universities vary widely in the quality of student assessment. Similar to the competitive test like GMAT, TOEFEL, etc. evaluation based on a set of comparable tests will also have impact on quality assurance. These are few examples. Similar examples can be multiplied but may not be necessary.

What is important is to develop a set of objective criteria against which a teacher education institution can be evaluated by a group of external experts, in collaboration with internal members of the faculty so that performance of one teacher education institution, on this set of criteria, can be compared with another.

Such institutional evaluation mechanism must stipulate tools and techniques of evaluation. Data bank, observation schedules, questionnaires, tests, interview schedules, document analysis and a variety of other tools can be used for institutional evaluation.

The evaluation should be carried out by people with some expertise and competence in administering the tools and techniques of data generation, classification and interpretation. Although such schemes are taken for granted among the evaluators who are drawn from various colleges and universities, this needs to be examined. For example, in scores of observation of classroom against a set of criteria of classroom teaching competence scale varies widely among the observing teacher educators. However, the inter-observer variation reduces significantly once the observers are trained in the ground rules for observation. It would be necessary to develop ground rules for applying each of the tools and techniques developed for assessment of teacher education institutions. It would also be necessary to provide training to the evaluators rather than accepting their skill for granted. Unless the inter-evaluator variation can be reduced to an acceptable low, the purpose of evaluation of an institution will not be served fully. The scores cannot be compared against any national norm.

Accreditation and certification can be meaningful and respectable only when the assessment is objective, reliable and valid. For building up the objectivity and reliability, it will be necessary to carefully develop the assessment tools, techniques and guidelines of their administration, training of the evaluators and generating objective reports.

NAAC has done significant efforts to promote the concept of institutional evaluation in higher education. In the name of autonomy, Indian higher education institutions have been reluctant, if not resistant, to the concept of institutional evaluation. The reluctance and resistance is still visible in case of teacher evaluation, particularly by students. Over the years, NAAC has reasonably succeeded in pursuing the cause of institutional evaluation. It has now been accepted by the community of teachers and administrators in higher education institutions. Further, in order to build the acceptability and reputation of institutional evaluation, NAAC has developed a set of criteria and benchmarks. Admitting that there is scope for further improvement, it has developed a large number

of tools for quality assessment. NAAC's success is remarkable, particularly since it has no statutory authority. It cannot impose itself on to a college or university. As the initial resistance and reluctance is steadily melting, more and more higher education institutions are seeking institutional evaluation by NAAC. There are probably lessons to learn from NAAC's experience.

An important question is whether there is a case for a separate mechanism for assessment of teacher education institutions? —Whether NCTE should take upon itself the responsibility of institutional evaluation leading to accreditation and certification. There are, obviously, advantages and disadvantages. NCTE is a statutory authority. If it decides to undertake institutional evaluation for accreditation and certification, teacher education institutions have to submit themselves to NCTE's programme of evaluation. While this can prove harsh for some, it can also suffer from self-fulfilling prophecies. NAAC's assessment of teacher education institutions will be an external evaluation without an authority. Teacher education institutions will have the choice to opt for the assessment.

Since NCTE, as a statutory authority, is charged with the responsibility of quality management in teacher education, it would be appropriate for NCTE to develop its own set of criteria, train people and conduct evaluation of teacher education institutions for quality certification, accreditation and ranking. The ranking should be introduced for inter institution comparison, and developing healthy competitiveness on quality.

2.10 For Quality Assurance in Teacher Educaiton Propositions

On the basis of the presentations on various aspects of quality issues in teacher education, consider the following propositions for quality assurance in teacher education.

Proposition 1: Improve Admission Criteria and Procedure

Quality of incoming students in teacher education is most crucial. There is a need to change the admission criteria and improve admission procedure. NCTE should develop an all-India admission test, on the patterns of JRF, AIEEE or GMAT, for teacher education and lay down the minimum acceptable level of performance for admission. Only those candidates should be admitted who fulfil the stipulated criteria. Special care should be taken so that the battery of tests includes aptitude for teaching, attitude towards the profession, relevant subject competence, communication skills, etc.

Proposition 2. Develop a Model Curriculum for Teacher Education

Curriculum development is done by the faculty of education in the different universities. This fits in with the concept of autonomy of the university. However, universities differ widely in the quality and contemporariness of curriculum. NCTE should develop a model curriculum

for teacher education at the primary and secondary education levels. Such curriculum should be developed on the basis of intensive comparative research on teacher education curriculum in different universities in the world. Quality must be assured at the level of global competitiveness.

Although NCTE is a statutory organisation, it need not impose the curriculum onto the universities. NCERT provides a good example to follow; it prepares the model curriculum, e.g. national curriculum framework, model curriculum and even textbooks. States are not obliged to implement the curriculum; but states have an opportunity to adopt or adapt. Large numbers of States adopt NCERT curriculum and textbooks. When NCTE produces the curriculum document, universities would have the opportunity to adopt and adapt the model curriculum. This will change the quality of one of the major components of teacher education.

The teacher education curriculum can be developed in the form competency-based education that was successfully experimented by Technical Teachers Training Institute, Bhopal, in the late 1970s onwards. The competency-based curriculum provides significant opportunity for standardisation of quality of output.

Proposition 3: Develop Textbooks

Textbooks contribute significantly to the quality of education at all levels including teacher education. There is a huge deficiency in quality textbooks for teacher education. Majority of the textbooks are authored by people with commercial motives; they feed to the requirement of examinations rather than educating the prospective teacher. On the other side, very few university scholars, senior academics in the departments of education in universities write textbooks. They remain busy with their research publications. There are, however, exceptions. Some eminent scholars in education have written textbooks. This tribe of scholar-authors is vanishing. In order to assure quality of teacher education, it will be necessary to develop standard textbooks. The NCTE is well placed to take a new initiative in this area.

The NCTE may identify, through expert consultations, subjects on which quality textbooks are not available, but are required urgently. University scholars should be invited and commissioned to develop quality textbooks on teacher education.

Proposition 4: Develop Norms and Specifications for Internship in Teaching

Current 'practice teaching' model should be replaced by internship in teaching where the trainee teacher takes full task and load of a teacher and discharges all his/her duties in the school. It provides the trainee a more holistic experience of a teacher in a school, rather than just practising teaching. The regular teacher in the school can now act as mentor for the trainees.

This is the most crucial programme in the pre-service teacher preparation. Universities prescribe 35 to 40 practice lessons for the trainees, based more on tradition and convention rather than on any scientific basis. Instead of practising the same 'structured presentations' 40 times, NCTE should specify that at least four or five different methodologies like structured presentations using PPT slides, cooperative learning, research and exploration, ICT integrated learning, etc. should be practised during the internship programme.

Proposition 5: Develop Norms of Curriculum Transaction and Teaching and Learning Process

The key to quality in teacher education is modernisation of the teaching-learning processes. Various methods of teaching taught in teacher education curriculum are scientific, but not practised within the programmes of teacher education itself. For example, the need for 'walking the talk'.

The NCTE should develop a set of norms of teaching-learning process for curriculum transaction. The norms should specify use of minimum number of different methodologies for transaction of curriculum, e.g., structured presentation with PPT slides, blended learning incorporating e-content, group assignment, research and exploration, field study, project work, etc.; minimum number of learning episodes to be transacted with a particular teaching and learning methodology.

Proposition 6: Develop Norms of Research for Teacher Educators

Quality of teacher education cannot be improved unless it is continuously supported by research and development activities. This is a serious concern since the research is probably the weakest component in teacher education. Faculty research is largely restricted to guiding postgraduate, M.Phil. and doctoral students. Very few faculty members conduct research on their own. Majority of the research studies are either imitative or are based on easy availability of certain research tools – tests, inventories, etc. There does not seem to be any excitement for research among the faculty; there is, however, some compulsion for research for the career advancement scheme. Quality of teacher education cannot be assured without more rigorous involvement of the members of the faculty of education in research.

The NCTE should specify minimum number of research projects to be taken by teacher educators in the university departments of education and colleges of education. Size of the project could be decided on the basis of several criteria including project budget. Further, the NCTE should specify the number of papers to be published by the teacher educators. Following the international pattern of the Research Assessment Exercise (RAE), research contribution by the teacher educators can be assessed, and the quality of their institute can be assessed by cumulative scores.

This should be separated from guiding research students at post-graduate and doctoral levels. Further, the NCTE should prescribe and encourage planned research so that each IASE may specialise in certain areas of research and each teacher educator specialises in one or two years of educational research.

One of the major problems of conducting research by the members of the faculty of education is lack of availability of funds; and also long delay in processing the proposals. The NCTE should set aside adequate funds for support to research projects by the teacher educators.

Proposition 7: Develop Policies and Norms for ICT in Teacher Education

ICT should be an integral part of teacher education programme. The NCTE should set up a mechanism to develop an ICT policy and norms for teacher education. ICT policy in teacher education should comprise ICT education of the teacher educators and teacher trainees, ICT integrated education as an integral component of teacher education programmes, and e-learning particularly for in-service education.

There is a wide gap between the preaching of ICT integration in education in the courses on educational technology and the actual practice. NCTE should develop norms of ICT in teacher education. The norm should comprise specification of technological aids, the contents and software. The second set of norms should specify the extent and mode of utilisation of ICT in educating the teachers.

The integration of ICT in teacher education can provide substantial support to competency-based education. Teachers in service can update their competence through online education. Similarly, pre-service education of teachers can blend face-to-face learning, e-learning, internship in teaching, etc. for better results.

Norms should not be conservative; instead, should be futuristic and comparable to global standards.

Proposition 8: Develop Infrastructure Norms

The NCTE has set up certain basic norms of infrastructure for teacher education institutions. The norms are modest to be able to assure quality. It is barely functional, but not adequate. This needs to be reviewed in the context of the revised situation characterised by government policy of universal school education with quality, and quantum jump in the financial provision for education at all levels.

The NCTE should set up a mechanism of defining norms of infrastructure that are globally comparable. If current norms are barely functional, revised norms should be adequate, aesthetic and satisfying to the faculty and students of teacher education institutions.

Proposition 9: Develop Staff Norms

There are large number of academic staff vacancies in the colleges and departments of education in the universities. This has also affected the quality of the recruitment in teacher education. This shortage and lowering of quality affects the quality of teacher education programme. For quality assurance in teacher education, existing norms should be seriously reviewed and reconstructed. Following the international trends of staffing in teacher education institutions, the NCTE should develop norms of academic staff with interdisciplinary background, qualification like M.Ed., M.A. and M. Phil. in education may not be compulsory for all, but necessary for only a few in the faculty.

Teacher educators should be provided advanced in-service education periodically within India and abroad. They should be encouraged to participate in international conferences every three to five years with full financial support.

There is a growing argument that teacher education deals with school education sector. Hence the teacher educator's salary and perks should be guided by school sector rather than the university. In some States, Rajasthan, for example, teacher educators are paid according to the norms of school education department. This must change. The NCTE should ensure that teacher educators are part of the higher education system, without which it will not be able to insist on the staff norms.

Proposition 10: Create Annual and Bi-annual Institutional Plans

In the text above, the mechanism and need for strategic planning for quality assurance in teacher education is obvious. For quality assurance in teacher education, the NCTE must emphasise on institutional planning. The NCTE must insist that all institutions of teacher education prepare annual and bi-annual plans indicating research and innovations, quality assessment and management. Plans must be developed through participative staff workshops. Such institutional plans should be one of the important bases for quality assessment and certification.

Proposition 11: Set up Mechanisms of Quality Management

Concern for quality ir education is expressed in every corner today. There is, however, no mechanism for quality management in the teacher education institutions. Mention has been made about the techniques of quality management like Quality Circle, Total Quality Management, etc. earlier. The NCTE should stipulate that every teacher education institution constitute its own quality management system. Further, the NCTE should encourage and provide token encouragement funds for networking the quality management groups in different teacher education institutions. Setting up and functioning of the quality management groups should be supported by the NCTE with professional literature and consultants at the initial stage.

Unlike administrative management and financial management, quality management is taken for granted. People in the leadership position in teacher education institutions are not provided with training in quality management. This is a serious gap. The NCTE must initiate professional programmes on quality management in teacher education, initially for the heads of IASEs and principals of CTEs, slowly but steadily increasing to cover all teacher education institutions.

Proposition 12: Adopt 360° Institutional Evaluation

Quality assurance is an internal process that can be supported by comprehensive self-evaluation of the institution. The NCTE should insist on 360° appraisal of each teacher education institution; appraisal done by the head of the institution, teaching faculty, and non-academic staff, students, heads of schools who engage the trained teachers. Such appraisal should preferably be done annually. The results of the 360° appraisal should be reflected in the annual institutional plan. The NCTE should develop in consultation with experts tools and techniques and modalities for institutional self-evaluation of teacher education institutions. Such tools and techniques should be widely disseminated to all the teacher education institutions.

Proposition 13: Rank Teacher Education Institutions

NCTE should develop a set of criteria for evaluating teacher education institutions, particularly Institutes of Advanced Studies in Education (IASEs). These rankings should be publicised in the NCTE journal and also in the national and regional newspapers. NCTE should also consider providing financial incentive, besides recognition, to those who top the list.

Proposition 14: Stop Mushrooming of Teacher Education Institutions

There has been a tremendous expansion of teacher education institutions. Together, these institutions produce more teachers than the system can absorb. Also, most of the private teacher education institutions have resorted to commercialisation by charging high fees in exchange of poor quality programmes. This has seriously affected quality of teacher education while aggravating problem of 'qualified unemployment'. On the basis of projected enrolment and teacher requirement, each state should determine the intake capacity in the teacher education institutions.

The NCTE should consider imposition of a five-year moratorium on opening new teacher education institutions. During this period, emphasis should be on consolidation, removal of obsolescence and modernisation, and quality improvement.

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Appendix I

Norms for Secondary Schools

Land	2 to 4 acres
Constructed area	not more than 50% of the land area
Teachers	One for every 30 students; at least one for every subject area; qualified teachers for sports, games and physical education, music and art
Facilities[1]	1 classroom for every 30 students • One integrated junior science lab (for classes 6th to 8th) • One science lab each for physics, chemistry, biology, English Language, Geography, Mathematics for 9th to 12th grades • Disable friendly facilities like ramp, special toilets, classroom furniture, etc. • SIT to receive EDUSAT programmes • OHPs, LCD projector • Electricity • Musical instruments, Gym equipments, sports and games materials • Junior computer lab with 30 computers for 6th to 8th graders with internet connectivity • Senior Computer Lab with 30 computers for 9th to 12th graders with internet connectivity • Separate health/restrooms for boys and girls • Separate cubicles for teachers with computing facilities – one computer for every 4 teachers with internet connectivity • Safe drinking water facilities • School canteen and stores • Separate toilets for girls and boys, and staff

[1] In Chinese schools, the computer centres are usually huge with 150 to 200 computers, VDUs nearly sunk into the desks; all with high band internet connectivity, probably served through a high power server.

- Library with computer facilities and professionally qualified staff
- Separate offices of Principal and vice-principal with computer facilities
- School office for non-teaching staff with computer facilities
- Hobby room(s) for developing creativity and life skills including music, art and paintings
- Playgrounds – soccer, hockey, volleyball, basketball, badminton, tennis, preferably separate for girls
- Indoor games facilities separately for girls and boys
- Gymnasium separately for girls and boys
- Gardens and Social Forestry

Chapter 15

Status and Recruitment of Teachers: Implications for Teacher Education

C.S. NAGARAJU

1. Introduction

Teachers continue to play a vital role in the formal education needed for maintaining the democratic civil societies. The National Policy on Education (1986) approved by the Indian Parliament proclaims, "The status of the teacher reflects the socio-cultural ethos of a society; it is said that no people can rise above the level of its teachers. The government and the community should endeavour to create conditions, which will help motivate and inspire teachers on constructive and creative lines. Teacher should have the freedom to innovate, devise appropriate methods of communication and activities relevant to the needs and capabilities of and the concerns of the community." The place provided for the role of teachers in comparison with other vital occupations in terms of the rewards, both tangible and intangible, is directly linked to the importance accorded to education in its formal sense in a society. Both forms of rewards provide motivation for individuals to obtain the requisite qualifications and take up teaching as occupation. Historically, teacher as an occupational category has seen many changes in its occupational status due to the changing nature of the roles and functions of education in society and the expectation of stake-holding entities. Stake-holding entities are those sectors of society which legitimize education or those which utilize the services of education. Some examples of the legitimating sectors are religion, state, guilds, etc., and utilizing entities are families, economy, state, etc. In the past, relatively stable social structure needed a hierarchical arrangement in legitimization. During ancient and medieval periods, religions legitimized other social institutions including education and accordingly the control as well as utilization took place under the sanction of the religion. Later on the state became the legitimating structure and controlled education. In modern societies, the education sector comes under the influence of many

legitimating as well as utilizing entities simultaneously. Teaching and education related roles take different forms and requirements. Accordingly, the status of teachers experiences fluctuations.

Indian society at present is undergoing rapid changes and education as a societal function is being shaped by both internal and international influences of regulatory nature as well expectations for its instrumental nature. Hence, teacher as an occupational category comes under limelight quite often. This paper attempts to analyze the status of teachers in the modern Indian society.

2. The Concept and Meaning of Status

Social status is the honour or prestige attached to one's position in society or one's social position. The word 'status' refers to the position on a vertical scale. The stratification system, which is the system of distributing rewards to the members of society, determines social status. Social status or the position or rank of a person or group within the stratification system, can be determined in two ways. One can earn one's social status by one's own achievements, which is known as achieved status, or one can be placed in the stratification system by one's inherited position, which is called ascribed status. Status refers to the relative rank that an individual holds; this includes attendant rights, duties and lifestyle in a social hierarchy based upon honour or prestige. Status inconsistency is a situation where an individual's social position has both positive and negative influences on his or her social status. For example, an occupation may have a positive societal image (respect, prestige) which increases his or her status in certain social situations, but may earn little money, which simultaneously decreases his or her status in some other human interactions.

The functions performed under any occupation for the collective well-being of the members of the society depends on the supply of the qualified persons among members. The status accorded to an occupation is inversely related to the availability of qualified persons. This is particularly so in a stratification system based on achievement. The availability of qualified person depends upon the opportunity cost one has to pay in acquiring the qualifications needed for different occupations. Some occupations require prolonged education to acquire the requisite knowledge and specialized skills. The cost of producing such persons will be high and the earning forgone by the persons while acquiring the qualification will be substantial. Hence, supply of qualified persons will be restricted. The reverse is true in the case of occupations requiring less preparation time.

Notions of status with reference to larger society and in relation with other occupations in organized sectors appear to change when the frame of reference shifts to smaller face-to-face communities and work places. The subjective notions of perceiving status in real time shift from expectations pervading the culture in the work place. It manifests in real

encounters of the individuals in different capacities like manager, stakeholder, client, peer group etc. For example, a primary teacher living and working in a small rural community is likely to command respect next to village leader. In addition to teaching, the teacher may be called upon to mediate the communications from outside world or as an adviser providing information in collective decision making and so on. Hence, the multiple roles a person performs in a social position also contribute to the status.

There are also some occupations classified as professions which expect greater accountability in addition to the qualifications. The pursuers of such occupations have to be self-disciplined and responsible. Professions attract high esteem, an important criteria of status. Hence, the type of occupation will also contribute to the status accorded to persons pursuing them. In the medieval period, only very few occupations such as the occupation of a clergy, legal workers like judges and medicine men were considered as professions. In modern societies, many more occupations have emerged to claim the status of profession. In Indian context, teaching was considered as a profession in ancient time and continued to be so even during the medieval times. Rulers bequeathed lands for the teachers to sustain themselves and render their services to the aspirants. The status of teacher in modern times has to be examined from the perspectives of the criteria underlying the stratification system in a given society. Sinha (1998) points out that the standing or regard and competence are performance indicators, whereas the working conditions and rewards are compensations and the value contribution of the occupation resides in the function itself.

3. Status of Teacher in India

Teachers as an occupational category do not constitute a homogeneous group. The status of primary teacher is lower than the status of secondary teacher and both the categories come below teachers in higher education. Even if we take any one category of teachers, their status is perceived as low as compared to other jobs in the government requiring equivalent general qualification. In advanced countries teachers are highly paid with special reference to primary school teachers and primary education is being given utmost importance. But the situation in our country is entirely different. The work of a teacher is not given due importance. New methodology, strategies in classroom teaching which are followed in foreign countries are brought to Indian schools. It will be appreciated if the efforts are made to improve the economic status of teachers in India. Indian students are doing exceptionally well in all the fields. It is to be considered that Indian academic excellence reached far and wide on the globe due to excellent basic education and efforts. But the social and economical status of teachers is not at all attractive when compared to advanced countries.

The above perception appears like the echo of the state of affairs reported by the National Commission on Teachers-1 way back in 1985. They state in their report:

> "That our school teachers, do not enjoy a high social status is no secret; every Commission before and after independence has bemoaned the fact. University Education Commission regretted that school teaching was a much 'denigrated profession' while Mudaliar and his team expressed their dissatisfaction in no uncertain terms that the social status given to the school teacher in the country was unsatisfactory, as also his salary and other conditions of service. In our own survey nearly 82 per cent of primary schools who responded to the question regretted that the teacher in our society today does not receive adequate respect and recognition. An equally high proportion of secondary teachers (82.3%) felt likewise. The response of teachers' organisations was understandably even more pessimistic: 93.7 per cent finding the present position of teachers entirely unsatisfactory and unacceptable"

The same Commission recorded in their second report dealing with teachers of higher education as follows:

> "An idea about the status of a particular profession can be had from the way it is viewed in relation to other professions. Its relative position can be ascertained on the basis of such a comparative assessment. Therefore, opinion in this context was elicited not only from the teachers but also from the students and members of the community at large. The respondents were asked to indicate from a list of ten professions, in order of priority, the career which they would advise their son/daughter or younger brother to take up. Class I Civil Service, medicine and engineering, in that order, received the first two choices by almost all of the college and university students. University teaching was chosen by a fifth of students hailing from the universities and only by about 12 per cent of college students. College teaching occupied the sixth rank among college students. It may also be noted that one-fourth of college and one-fifth of university students gave university teaching as their last two choices; a high percentage of both have ranked college teaching the lowest."

The reactions of the members of the community present a similar picture. Class I Civil Service received the first two choices by almost half, medical profession by well over a third and engineering by over a fifth of the respondents. Hardly 12 per cent of them gave preference to university teaching and only 8 per cent to college teaching, their rank being sixth and ninth respectively. It may also be noted that about one-fifth of the university and over a third of the college respondents ranked teaching in universities and colleges as their first two choices.

Separated by two decades, the two lengthy quotes express similar

perception. Firstly practitioners and advocates of teaching occupation consider the job as different from other government jobs and vital to the survival of the society. They perceive that it requires specialization and is professional in nature. They also feel that it has failed to attract talents as a result of the attraction of high emoluments for jobs offered in emerging employment market in other sectors of economy. Since the present paper is about the status of teachers in contemporary Indian context, it needs to be examined whether teaching is a profession or not.

4. The Concept of Profession: Is Teaching a Profession?

Traditionally the term profession emerged in the context of religious faith. Oxford English Dictionary provides many variations in meaning for the term profession revolving around religious faith. One of the variations states, profession is "an occupation in which a professed knowledge of some subject, field, or science is applied; a vocation or career, especially one that involves prolonged training and formal qualification." Later on, it says "More widely: any occupation by which a person regularly earns a living" (dictionary.oed.com, 2008). Wikipedia, the online encyclopedia defines profession as "an occupation, vocation or career where specialized knowledge of a subject, field, or science is applied. It is usually applied to occupations that involve prolonged academic training and a formal qualification. It is axiomatic that "professional activity involves systematic knowledge and proficiency." Professions are usually regulated by professional bodies that may set examinations of competence, act as a licensing authority for practitioners, and enforce adherence to an ethical code of practice." The encyclopedic meaning introduces an element of social arrangement and membership of a social category to the term profession. Online Business dictionary defines profession as occupation, practice, or vocation requiring mastery of a complex set of knowledge and skills through formal education and/or practical experience. Every organized profession (accounting, law, medicine, etc.) is governed by its respective professional body.

Australian Competition and Consumer Commission defines profession as a disciplined group of individuals who adhere to high ethical standards and uphold themselves to, and are accepted by, the public as possessing special knowledge and skills in a widely recognised, organised body of learning derived from education and training at a high level, and who are prepared to exercise this knowledge and these skills in the interest of others (www.accc.gov.au).

5. Professional Nature of Teaching

Teaching in its formal and organized sense for societal renewal through transmission of knowledge and culture from generation to generation existed in India more than three thousand years. Teacher role had all the characteristics of a professional in line with modern day

yardsticks like having ethical standards, upheld themselves and were revered by public. They not only had sufficient means to make a comfortable living for their own families but also supported their students. According to Indian mythology, even gods when they took birth on earth spent their later childhood and adolescence in "gurukul", the Sanskrit term for self-sustaining boarding school, where students lived, worked and learnt under the tutelage of the presiding teacher the relevant lessons needed for taking the adult roles after they returned to their parental homes. Even now the traditional art forms, classical music, dance etc. are taught in similar fashion to the aspiring students by experts in the form of "gurukul". But such centres might have dwindled during medieval period due to the altered social order resulting from foreign invasions.

During post-industrial period, education became more structured and came under the scrutiny of political legitimacy resulting in the establishment of school system adopted from the education system prevailing in middle nineteenth century Britain. Indian leadership preferred to maintain the continuity of the system to serve the interest of a Sovereign Democratic Republic of India which was implanted by the foreign rulers for their own ends. In the context of a subjugated society, teachers become agents of ruling power and lose their professional status. Evolution of Indian education under the state control during the British rule made teachers a category of government employees. Their job was mainly to develop cognitive skills at elementary stage through repetitive tasks and transmit prescribed textbook knowledge at secondary level and beyond. The mindsets that pervaded the work culture of school education continue to prevail even today after six decades of independence. Hence, the job of the teacher needs to be examined from the present day professional parameters prevailing in western democracies.

India at present is vying for the status of a developed nation. It is undergoing rapid socio-economic changes and attempting to tread the path of capitalist world. While the knowledge on the status of teaching and teachers generated especially in English speaking countries like USA, Canada, UK , New Zealand and Australia may be relevant, but the Indian situation is more complicated due to its long history of education.

Myron (1953) while discussing the issue of education as profession lists several parameters to identify any occupation to be classified as a profession. They are: (1) offering a unique, definite and essential social service; (2) An emphasis upon intellectual techniques in performing its service; (3) A long period of specialized training; (4) A broad range of autonomy for both the individual practitioner and the occupational group as a whole; (5) An acceptance by the practitioners of broad personal responsibility for judgments made and acts performed within the scope of professional autonomy; (6) An organizational emphasis upon the service to be rendered, rather than economic gain for the occupational group; (7) A comprehensive self-governing organization of practitioners; and (8) A code of ethics.

In the light of characteristics discussed above, can teaching be classified as a profession? A cursory examination of the list of characteristics of a profession shows that teaching job in schools in many parts of the world do not reflect all characteristics of a profession, more so, in the case of Indian scenario. The foremost criterion for professionalizing teaching is a systematic knowledge base. Hiebert et al (2002) while analyzing the professional status of teaching in US context observes that in spite of the continuing efforts of researchers, archived research knowledge has had little effect on the improvement of practice in the average classroom. The authors explore the possibility of building a useful knowledge base for teaching by beginning with practitioners' knowledge. Much of the discussion on teaching as profession is taking place in the United States of America (Darling-Hammond et al 1995, Beyer et al, 1989). The axiomatic statement that profession is based on systematic knowledge and proficiency do not hold good for teacher as a practitioner at all levels of education in India. Generally, teaching in India is treated as a repetitive task at elementary stage of education with a low level of knowledge base and rudimentary skills. At higher levels, only the transmission of content is emphasized and hence, any one can become teacher. The practice of demanding certification for teaching job at the school education level is more a bureaucratic device used for short-listing purposes. At higher education level, the competence that may differentiate teacher from other occupations is not at all taken into consideration. Persons offering themselves for the job are self-selected post-graduates. In very few cases, the candidate seeks job as a deliberate choice and for most candidates it is a default choice.

Coming back to the characteristics identified by Myron, teaching no doubt is an essential social service with defined identity. But emphasis on intellectual techniques is getting diluted in selection and retention of teachers in the system. The policy of central government under Education for All efforts like DPEP, SSA etc. allows any one with certain level of school education to perform the job of a teacher at primary stage. A report published in DPEP Calling, the official publication of GoI, has this to state regarding para teachers in the country :

> "Though, the schemes of para teachers vary significantly in their origin and approach but the common factor in all of them is that the teachers are low paid and are appointed on contract. In most cases, barring Gujarat and Maharashtra, pre-service training is not mandatory, induction training is largely between 20-40 days' duration, except in the case of Vidya Volunteers of Andhra Pradesh and Sahyoginis of West Bengal. Another significant point about the para teachers is that they are mostly from the local community. Appointing authorities in most cases are VECs/SCs/Panchayats. The local communities have a major role in functioning and management of para teacher run schools, especially those in smaller habitations.

Honorarium to the para teachers also, in majority of the cases, is paid through the community"

Despite the lofty rationale provided for justifying the need for under-educated and under-prepared para teachers engaged on low salaries, when we look at the schools where para teachers work, it appears that they are considered suitable to teach in schools located in marginalized and impoverished communities. Mostly, the children studying in the schools taught by para teachers come from socially disadvantaged classes. Their educational needs require best possible teachers and not para teachers.

5.1 Duration of training

Most of the states in the Indian Union stipulate pre-service training of two-year duration after 12 years of schooling to become eligible for teaching at primary stage. For secondary teachers, it is one-year after graduation in any of the school subjects. Quite a number of states do not feel the need for training to teach at higher secondary level. A post-graduation in the subject taught is enough for entering teaching profession. Four Regional Institutes of Education under the management of NCERT and one deemed university offers Bachelor of Education (B.Ed.) of two years duration started on the basis of the advocacy of NCTE. But, by and large, the duration of teacher preparation has remained same over the decades and inversely related to level of education ranging from 2 years after general education in the case of pre-school and primary teaching to 'no felt need' for preparation at higher secondary education onwards.

Another aspect of profession under threat even in the developed part of the world is the autonomy of the teachers. Educational tradition in UK, Canada, USA etc are well known for high level of autonomy of teachers in making educational decisions in the areas of practiced curriculum and selection of teaching-learning materials and teaching methodologies to transact their curriculum. But in recent years the teachers in those countries are experiencing the erosion of their autonomy in the face of intervention by government. Governments are apprehensive of intense competition in an era of globalization of economy (Bottery and Wright 2000). Autonomy to the teachers in the Indian context is a distant dream. Teachers in India lost their autonomy when the colonial government derecognized the indigenous education and replaced it with the English education without its attendant autonomy of teachers. The foreign government in the middle nineteenth century had little trust in natives performing the role of a teacher. Prescribed curriculum emphasizing English language and literature alongwith European history became the features of standardized curriculum and public examinations conducted and supervised by the department of education. This ingrained feature has persisted even after more than one and half a century in the Indian schools. School curriculum and syllabus are highly structured and textbook bound. The stranglehold of high stake examinations expects teachers, right from the first standard,

to train students to reproduce textbook information. Since their professional training lacks depth and do not provide any time in sensitizing student teachers to their profession including the notions of autonomy and accountability, the teaching community as an organized group is not in a position to visualize the autonomous teacher's role. The teachers' organizations are happy to represent the interests of teachers as trade unions fighting for wages and parity with employees working in public administration.

In conclusion, it can be stated that teaching as an occupation has to go a long way to become a profession in India. Society appreciates professions more than other occupations. The status of teachers in the country can only be improved when the teaching becomes really a professional occupation. Professionalization of teaching is more a function of teacher education and the organized efforts of practitioners. Like medicine and law, the teachers' organizations need to come together to define and enforce professional standards and ethics for entry and performance. International standards arrived at for guidance of the member countries to secure professional status for teachers also uphold the need for teaching profession to ensure proper status for teachers.

6. ILO/UNESCO Recommendations on the Status of Teachers: An Overview

At the international level, there are two standards setting instruments for status of teachers; one recommended The International Labor Organization (ILO) and UNESCO; and the second approved by the UNESCO. The first instrument was agreed way back in 1966 on status of teachers and covers all teachers at school level from pre-primary through secondary level working in government and private sectors, in all type of schools. The second, on the status of teaching personnel in higher education, was ratified in 1997. The instrument complements the first by including personnel working in higher education sector. The range of job includes teachers, scholars, researchers and others providing student services. The document is in the form of recommendations as guidance to the policy makers and professional organizations to secure professional status and commensurate rewards and accountability for teaching profession.

UNESCO has compiled ILO/UNESCO document (1966) and UNESCO document (1997) along with a user-guide in one volume and has published it in 2008. The user-guide provides answers to 'Frequently Asked Questions (FAQs)' ranging from the features of the documents including uses of the two documents to practitioners, employers, regulators, and the follow up mechanisms to promote implementation of the recommendations by the member countries. The recommendation is not approved as a Convention and hence, the contents are not legally binding. It is meant for advocacy of the proper status of teachers in all parts of the

world. The recommendation is used as the basis of promotional activities and identifies current issues and practice in different countries through studies. A joint committee of ILO and UNESCO called Committee of Experts on the Applications of the Recommendations concerning Teaching Personnel (CEART) has been established to promote knowledge and use of the standard in Member States. The CEART also receives complaints by teachers' organizations working in different countries regarding non-compliance of the recommendations, conducts studies to verify the complaints and informs the efforts in resolving the conflicts. For the purpose of the present paper, the recommendations for school teachers are more relevant.

6.1 The ILO/UNESCO Recommendation Concerning the Status of Teachers (1966)

The document consists of 146 short paragraphs organized in 13 sections. The first section deals with definitions and defines 'teacher' as those persons in schools who are responsible for education of pupils and the expression 'status' used in relation to teachers means both the standing or regard accorded them, as evidenced by the level of appreciation of the importance of their function and of their competence in performing it, and the working conditions, remuneration and other material benefits accorded them relative to other professional groups." (I.1b).

The third section contains seven guiding principles. Each of the guiding principles forms the basis of detailed recommendations to set international standards encompassing professional, social, ethical and material concerns of teachers. The issues include:

- Teacher preparation and professional development
- Recruitment and career
- Rights and responsibilities
- Working conditions
- Remuneration
- Social security
- Stop-gap arrangements in the case of short supply of teachers

Since the recommendations serve as standards to be reached regarding status of teachers in member countries, it would be pertinent to identify key recommendations which lay foundation for detailed recommendations.

The most fundamental recommendation is to treat teaching as a profession. The recommendation states:

> "Teaching should be regarded as a profession: it is a form of public service which requires of teachers expert knowledge and specialized skills, acquires and maintained through rigorous and continuing study,; it also calls for a sense of personal and corporate responsibility for the education and welfare of the pupils in their charge" (III..6)

In an earlier section, it was argued that teaching occupation does not live up to certain essential characteristics of profession as identified in literature in the Indian context. The principle guiding the definition of status of teachers by the ILO identifies expert knowledge and specialized skills obtained through rigorous study and updated throughout the career and individual and collegial ownership of the responsibility for the education and welfare of their students as the hallmark of professionalism. Professionalization and status of teacher reinforce each other. It may be productive if the education sector concentrates on professional aspects of teacher preparation and practice leading to betterment of teacher status than the other way round.

It is not just some techniques or tricks of trade that make a teacher. It requires an informed application of mind and emotions along with sustained interest in keeping oneself updated regarding the knowledge of subject matter and new tools and new practices. Countries like India require such teachers in millions. Hence, the policy for teacher requirement needs to start right from the entry point of teacher preparation.The ILO recommendations endorse the importance of admission and programming of teacher preparation process. Appropriate policy for ensuring the required quantity and planning and implementation of programme to ensure quality becomes corollary to professionalization.

> "Policy governing entry into preparation for teaching should rest on the need to provide society with an adequate supply of teachers who possess the necessary moral, intellectual and physical qualities and who have the required professional knowledge and skills. (V.11) The purpose of a teacher-preparation programme should be to develop in each student his general education and personal culture, his ability to teach and educate others, an awareness of the principles which underlie good human relations, within and across national boundaries, and a sense of responsibility to contribute both by teaching and by example to social, cultural, and economic progress" (V.19).

In India, educational policy and planning most often are led by the bureaucracy controlling supply in collaboration with experts working at higher educational institutions. Role of practicing teachers and other stakeholders plays marginal role and is limited to facilitate implementation of programmes, cascading from above. ILO recommendation advocates the role of organizations of teachers, civil society and the parents alongwith authorities and experts.

> "there should be close co-operation between the competent authorities, organizations of teachers, of employers and workers, and of parents as well as cultural organizations and institutions of learning and research, for the purpose of defining educational policy and its precise objectives" (IV.10k).

In a country as big as India, only broad policies of accommodating nature can be laid at the national and provincial levels. Such policy guidelines at best can provide the criteria for assessing educational demands for funding from public finances. It becomes highly dysfunctional to lay down a uniform policy and detailed norms for educational policy and objectives of education at different levels. India has witnessed in mid-nineties the debate on the policy stipulation of Minimum Levels of Learning (MLL) for primary stage. In many parts of the country the gap between MLL and the actual school outcomes at the systemic level has been found to be huge, making MLL unattainable. This fact has emerged in the baseline and mid-term assessment of class V students conducted by NCERT and the countrywide collaborative assessment sphere headed by Pratham, an NGO under the banner of annual status of education report (ASER). ILO recommendation mentioned above actually presupposes autonomy with respect to decision regarding precise educational objectives at either school or school district levels.

In enhancing the status of teachers, the ILO provides finer details of the teacher preparation programmes, both pre-service and in-service. A teacher preparation programme should include:

a. General studies;
b. Study of the main elements of philosophy, psychology, sociology as applied to education, the theory and history of education, and of comparative education, experimental pedagogy, school administration and methods of teaching the various subjects;
c. Studies related to the students' intended field of teaching;
d. Practice in teaching and in conducting extra-curricular activities under the guidance of fully qualified teacher (V.20).

Authorities, in consultation with teachers' organizations, should promote the establishment of a wide system of in-service education, available free to all teachers. Such a system should provide a variety of arrangements and should involve the participation of teacher-preparation institutions, scientific and cultural institutions and teachers' organizations. Refresher courses should be provided, especially for teachers returning to teaching after a break in service (VI.32).

The two 'Recommendations,' quoted above clearly provide the desirable scope and range of teacher education curriculum and continuous nature of teacher development. The second 'recommendation' specifically focuses on the demand based in-service teacher education developed in consultation with broad spectrum of stakeholder groups and delivered through varieties of channels. The institution of district education and training may be an appropriate and viable level to evolve in-service teacher education for relevant professional development.

Entry to teaching profession is the most important point in teachers' initiation to the profession. Hence, recruitment should serve as a right of passage involving admission to the profession. But the ILO

'recommendation' regarding the nature of teaching practice assumes that teacher gets employed and engaged on the basis of professional expertise. But in the Indian context, teachers practised independently and the students sought them. Reputed teachers ensured the continuity of their teaching tradition through their own students. Even today the classical music is taught in this fashion by renowned exponents. The recommendation VII 38 has the limitation of making teacher's role as an, 'employee'. But the subsequent recommendations given below are more in tune with the notion of teaching as a professional activity.

> In collaboration with teachers' organizations, policy governing recruitment into employment should be clearly defined at the appropriate level and rules should be established laying down the teachers' obligations and rights (VII.38).
>
> The teaching profession should enjoy academic freedom in the discharge of professional duties. Since teachers are particularly qualified to judge the teaching aids and methods most suitable for their pupils, they should be given the essential role in the choice and the adaptation of teaching material, the selection of textbooks and the application of teaching methods, within the framework of approved programmes, and with the assistance of the educational authorities (VIII.61).
>
> Recognizing that the status of their profession depends to a considerable extent upon teachers themselves, all teachers should seek to achieve the highest possible standards in all their professional work (VIII.70).

Dispute resolution in professional practice is much more complex than that of trade union. Self-regulation among professional practice through organization of practitioners becomes more crucial in enhancing the status of teachers. One needs to critically examine the following recommendation from the point of view of status of teachers. Should we not learn lessons from medical or legal practice?

> Appropriate joint machinery should be set up to deal with the settlement of disputes between the teachers and their employers arising out of terms and conditions of employment. If the means and procedures established for these purposes should be exhausted or if there should be a breakdown in negotiations between the parties, teachers' organizations should have the right to take such other steps as are normally open to other organizations in the defense of their legitimate interests (VIII.84).

Teachers require adequate infrastructural support to facilitate their smooth professional practice. They do need libraries, laboratories etc. Further, the lifestyle appropriate to their profession also requires adequate financial compensation in the form of salaries and perks. The following

recommendations of ILO provide basis for ensuring adequate income for the practitioners.

> Since the teacher is a valuable specialist, his work should be so organized and assisted as to avoid waste of his time and energy (IX.85).
>
> Amongst the various factors which affect the status of teachers, particular importance should be attached to salary, seeing that in present world conditions other factors, such as the standing or regard accorded them and the level of appreciation of the importance of their function, are largely dependent, as in other comparable professions, on the economic position in which they are placed (X.114).
>
> (1) It should be a guiding principle that any severe supply problem should be dealt with by measures which are recognized as exceptional, which do not detract from or endanger in any way professional standards already established or to be established and which minimize educational loss to pupils.
> (2) Recognizing that certain expedients designed to deal with the shortage of teachers, such as over-large classes and the unreasonable extension of hours of teaching duty are incompatible with the aims and objectives of education and are detrimental to the pupils, the competent authorities as a matter of urgency should take steps to render these expedients unnecessary and to discontinue them (XII.141).

7. Code of Professional Ethics

Way back in 1985, the National Commission on Teachers observed:

"There is a growing awareness of the inter-functionality of a teacher's rights and responsibilities and of the need to do something about it, not only among politicians and administrators but among teachers' organisations and teachers themselves. The idea that there should be a code of conduct for teachers has been debated for many years now, but there has been no clear policy decision in the matter. Whenever there is discussion of the falling performance levels of teachers the issue keeps coming to the fore momentarily now and then, but there is no sustained follow-up to work out and enforce its policy implications (NCT-I, 9.09-1985). Hopefully, the teachers and teachers' organisations themselves recognise clearly the need for such a code. In the Commission's survey a vast majority of respondents in each category expressed itself in favour of the idea (NCT-I, 9.10-1985). While expressing themselves in favour of the idea of a code, many of the teachers insisted that the formulation of the proposed code must be undertaken or completed in consultation

with the teachers or their organisations. All India Federation of Educational Organizations suggested that a code of conduct should be evolved only in consultation with the national teachers' organisations, and that instead of using the term 'Code of Conduct', it would be better to employ the term 'Code of Ethics for Teachers'.

The National Policy on Education (1986) stipulates that teachers' associations must play a significant role in upholding professional integrity, enhancing the dignity of the teacher and in curbing professional misconduct. National level associations of teachers could prepare a Code of Professional Ethics for Teachers and see to its observance (NPE 9.3). In pursuance of the recommendations of NPE (1986), the NCERT and All India Federation of Teachers' Organizations together finalized a Code of Professional Ethics for School Teachers. The code comprising thirty articles represents teachers' professional obligations towards (i) pupils, (ii) parents/ guardians, (iii) society and the community, (iv) profession, colleagues and professional organizations, and (v) management and administration.

8. Recruitment Policies for Teachers and Their Implications for Manpower Planning in Teacher Education

At the outset, it may be necessary to understand that the Constitution mandates the State to provide compulsory and free education to all children of the age group of 6 to 14 years and directs the state to endeavour to make provision for education of all children below 6 years. Secondly, school education (pre-school, elementary, secondary and higher secondary) is the concurrent responsibility of the Centre, state and local governments. Hence, the policies formulated at these levels will have cumulative effect on all aspects of school education including teacher recruitment and performance. Starting from the inception of our Republic in 1950, development of educational sector was pursued through Five Year Plans. State Planning Boards provided the norms for estimating the requirement and making financial provision for recruitment of additional teachers during the implementation of Five Year Plans. From Sixth Five Year Plan onwards, the Five Year Plans at the national level also provided for the development of educational sector at school level subsequent to the amendment of the Constitution in 1976 making school education a concurrent responsibility of the State and the Centre. All states under the Indian Union had committed to provide free and compulsory primary education for 6-11 age group under the Constitutional directive. At the primary stage, the norm for providing a school and the teacher pupil ratio guided the estimation of teacher requirement. Initially, it was teacher pupil ratio between 1:40 and 1:50 and a school within a walking distance of 1 km from a habitation. If any habitation had a population of 300 in plains and 250 in hilly area, a school should be provided within the habitation. The expansion of primary stage was decided by the supply capacity of states. Hence, around 60 per cent of all primary schools were single teacher schools by the mid-eighties.

The demand for elementary and secondary stage decided the expansion of primary to upper primary/junior secondary and upper primary/junior secondary to secondary and higher secondary schools respectively. Hence, only the norm for teacher pupil ratio governed the teacher requirement beyond primary stage till 1992. The National Policy on Education (1986) and its Plan of Action stipulated that no schools should have less than two teachers at primary stage irrespective of the strength. But beyond primary the need for teachers was based on the subject areas included in the curriculum and hence, the norm of teacher pupil ratio of around 30 in one section each for three classes namely VI, VII and VIII and a package of teachers of core areas of curriculum became the guiding principle for deciding the teacher requirements. Typically, a school may have a Headmaster, two language teachers, one social science and one science teacher to open or expand a junior secondary school. Hence, a minimum of five teachers and total student strength of 90 makes a school unit. Similarly, a secondary school would have the same team with an additional physical education teacher. Thus, the norm of a school unit requiring 1.5 to 1.8 teachers per 30 students may guide planning. The CABE Committee on Universalizing Secondary Education in its report submitted during 2005 used a norm of 1.5 teachers per additional classroom with 30 students. The Eleventh Five Year Plan (2007-2011) has adopted the criteria suggested by CABE Committee to estimate the requirement of additional teachers under the plan. A study by Institute for Applied Manpower Research (Yadav and Waghmare 2005) dealing with the manpower requirement in the form of teachers for school education by 2011 has used only the pupil teacher ratio calculated based on average of the same of the latest 4-5 years. This methodology using average teacher pupil ratio ignoring the school as a functional unit underestimates the teacher requirement.

Exercises of estimation of teacher requirement on the basis of projection of current and anticipated trend using prevailing norms do not work in all contexts. Even the policy guidelines get either diluted or altered under the pressures of implementation or of fund constraints. For example, the NPE states:

> The status of the teacher reflects the socio-cultural ethos of a society; it is said that no people can rise above the level of its teachers. The Government and the community should endeavour to create conditions which will help motivate and inspire teachers on constructive and creative lines. Teachers should have the freedom to innovate, to devise appropriate methods of communication and activities relevant to the needs and capabilities of and the concerns of the community (NPE 1986 9.1).
>
> The methods of recruiting teachers will be reorganised to ensure merit, objectivity and conformity with spatial and functional requirements. The pay and service conditions of teachers have to

be commensurate with their social and professional responsibilities and with the need to attract talent to the profession. Efforts will be made to reach the desirable objective of uniform emoluments, service conditions and grievance-removal mechanisms for teachers throughout the country. Guidelines will be formulated to ensure objectivity (NPE 1986 9.2).

But in actual practice, the central and state government programmes in mission mode like DPEP and SSA to universalize primary and elementary education introduced many schemes and programmes allowing dilution of professional requirement of teachers. One such programme introduced with much fanfare was the education guarantee scheme of Madhya Pradesh. A separate category of "para teachers" emerged on the scene. The international standard set by ILO recognizes the need for short-term measures in developing countries but stipulates that –

> "In developing countries, where supply considerations may necessitate short-term intensive emergency preparation programmes for teachers, a fully professional, extensive programme should be available in order to produce corps of professionally prepared teachers competent to guide and direct the educational enterprise." (ILO 1966-XII.142).

India cannot be considered as a developing country lacking programmes to produce corps of professionally prepared teachers. The political economy of education characterized by the domination of bureaucracy, centralized curriculum and pedagogic policies and the subordinate role given to teachers in all aspects of teaching practices has given rise to the cadre of para teachers. A flaw in the idea of a para teacher is not so much in the lack of pre-service training, but in its nature as a cadre of teachers. It has been pointed out that :

> "The idea (para teacher) had several obvious attractions. The involvement of educated unemployed rural youth in primary education sounded socially and politically correct. To those seeking reform in the system, along the lines of decentralisation, it promised 'community involvement'. To the politician, it promised a new means of tantalising the vast body of frustrated, jobless youth. To policy planners and bureaucrats, it suggested an innovative way to spend less money on primary education. And to everybody concerned about the state of education in a vague, generalised sense, it offered an opportunity to show to the full-time teacher that he or she was not indispensable."

What is more alarming is that substitution of unprepared and under-qualified para teachers in the place of professionally prepared teachers is seen as the strategy of the department of education to counter the truancy, inefficiency and unwillingness to work in interior places of regular teachers. A recent study indeed reported that school head teachers are more comfortable to work with the para teachers and opined that para teachers

are more accountable than the regular teachers (NCAER 2008).

NPE also pronounced in clear terms that the system of teacher education will be overhauled recognizing the fact of its continuous nature. While new institutional structures were introduced, content, duration and nature of teacher education programme both at primary and secondary levels have remained unaltered.

9. Role of Teacher Education and Status of Teachers

The time has come to engage ourselves in critical appraisal of the present day teacher education policy and approach. The term teacher education includes both preparation for entry to the profession and professional development through in-service education. At present, instrumental value of teacher education at entry level is certification of individual to form a pool of manpower from which employer can draw teaching personnel. In-service education also is geared to meet the need for the reorientation of working teachers for a new situation as perceived by the employer. Both these situations undermine the teacher's status. It makes teacher a worker than a professional.

Another important question one should ask is, whether the teacher education should focus on preparing teachers for a specified socio-political context or to prepare teacher as professional person capable of performing the role in any given socio-political context. The same question can be asked with respect to in-service teacher education. To put the same issue in an alternative proposition, should teachers in India be prepared as teachers of schools labelled as Indian schools or any other provincial identity within India like Karnataka, Kerala, etc.

Coming to the nature of teacher education, specially pre-service teacher education in India, it has remained conservative and out of date in the context of post-modern world. The structure, content and intensity of teacher education programme to prepare teachers for both elementary and secondary levels has remained more or less intact from what the country inherited at the time of independence. The system was evolved in India at a time when schools worked to prepare obedient workers for despotic government, technical workers in civic amenities and for secondary sectors of economy dealing with supply of raw materials obtained through extraction etc. Teacher was expected to transmit prescribed and circumscribed knowledge through a method useful in preparing students to a work culture involving rule-bound repetitive tasks. Education focused more on the cognitive development and over-emphasized skills and competencies to teach year grade curriculum based on prescribed textbook bound curriculum. Indicator of success of teacher was measured on the basis of his/her ability producing high scoring students in public examination. Hence teaching became a standardized activity of coaching and tutoring in schools and in home. Hence, teacher loses his/her respectable place as a role model. The same system has remained intact in India even today.

But the world outside has changed. The twentieth century society no longer emphasizes the orderliness of industrial production and factory work culture. Citizenship in one nation is no longer a powerful influence as individuals settle in different political context than the one in which they are born and grow up. Today's children encounter more cultural and ethnic diversities in schools and in their occupational life when they become productive adults as compared to their parental generations. The economy is driven by knowledge informed technologies prone to be rapidly replaced by new ones through innovations. Such societies require education to prepare children capable of learning themselves and also to be ready to unlearn what they learnt previously in the light of rapid changes they encounter. In such a society, only those teachers are valued and respected who can motivate and facilitate learning abilities of their students and not those who focus on fixed abilities of doing repetitive tasks. For schools, preparing students to learn: how to learn; learn how to think; how to communicate; and how to create assumes new urgency. Pedagogy embraces more and more the constructivist and critical approaches than definitive and didactic approaches.

Hence, teacher education should change in its purpose, content, structure and intensity. Primary focus needs to be on preparing a professional personality of the teacher. Profession involves autonomy and accountability. The autonomy for its exercise requires knowledge and special skills of higher order. Accountability requires internalized ethical standards and commitment to one's occupation. Sufficient time should be devoted to exposure to professional personality development experiences and reflection on such experience to critically examine and draw inferences. The task of shaping and honing professional personality should characterize both pre-service and in-service programmes for teachers. More than the 'techniques of the trade' and emphasis on classroom management, the student teacher should be trained in using tools of enquiry, communication skills and constructivist pedagogy. Secondly the student teachers should be exposed to develop curriculum at the practice level. Thirdly, they have to give primacy to student as a self-learner rather than a taught.

Professional associations/organizations should set standards and regulate entry into practice. In such circumstances, the status of teachers can be enhanced through in-service teacher education programmes organized by professional organizations through a negotiated focus on professional quality representing the demands of different stakeholders. In a situation like that, the professional nature of the teaching occupation can be reaffirmed and a self-regulated and reinforced professional development process would benefit the teacher collective.

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- www.acc.gov.au
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- www.navodaya.nic.in
- www.ncert.nic.in

Chapter 16

Professional Development of Teachers

S. MOHANRAJ

1. What is Professional Development?

Human history is flooded with incidents of man grappling with his environment in a struggle to exist. It is this struggle which in brief encapsulates the innate urge in man to develop professionally. This is seen in the ways of the ordinary working personnel we see amidst us everyday and the keenness with which they attempt to improve their skills to perform well.

To cite an example, a carpenter engaged to repair our furniture (at home) exhibits several characteristics of a professional. Before he begins his work, he makes sure that all the tools he has are in shape and work efficiently. He sharpens his chisel, makes sure the hammerhead is firmly fixed to the handle, the saw is taut and the drill works. This means that a good professional takes care of his tools. This is the first essential factor to be remembered while discussing professional development.

Secondly, a professional keeps replacing his tools with new ones, becomes familiar with the new gadgets available and also adapts himself/ herself to new materials available. Today, most carpenters use electric drills and laminate wood using synthetic adhesives and hardly ever use nails and hammers. This again is a sign of professional development – an ability to adapt and adjust to the changing needs of the society as well as update the knowledge required.

Both these factors, i.e., taking care of the tools required for the profession and updating one's knowledge related to the profession periodically form the crux of professional development.

1.1. What Motivates Professional Development?

In response to this question, it would be appropriate to recall what Charles Darwin, father of modern theories of evolution said: "Struggle for

existence and survival of the fittest." In today's world of stiff competitions, where the world is becoming a global village, the need to develop is imminent. This is much more so in the profession of teaching. The present paper makes an attempt to trace briefly the history of teacher training and how it is in a constant state of flux. The following section captures this aspect of teacher training.

2. Teacher Training – A Brief History

Teaching as a profession has perhaps been the oldest one, though it was not formalised in the modern sense of the term. Recorded history, right from its beginning has paid rich tributes to the teachers. For instance, Plato's devotion to Socrates, Alexander paying tributes to Aristotle, Rama to Vasishta, Krishna to Sandipini, Ekalavya to Dronacharya and Shivaji to Ramdas.

Perhaps teaching can also be considered pre-historic in the sense that every woman, the moment she becomes a mother, also becomes a 'born teacher.' She understands the needs of the child even though the child is not able to express those needs clearly. She attends to all the needs the child has without any hesitation and finds satisfaction in her job. She provides a total support for a while and gradually withdraws herself (weans away) to make the child independent. A teacher has an exactly similar responsibility. A definition of a teacher given by an unknown scholar captures this idea comprehensively: 'A teacher is one who progressively becomes unnecessary for the learner.' This definition subsumes the fact that a teacher like a mother is necessary (essential) for the learner at the beginning as the learner gradually should develop to realise that a teacher is redundant, and it is the teacher who should generate this awareness.

2.1. Formalised Models

In the modern day, both teaching and teacher training have been formalised, though the process had begun nearly two centuries ago. Contributions of Harbart, Dewey and others are worth remembering in this context. The developments that have taken place during this brief period of history can be classified under three categories, viz., the Craft model, the Applied Science Model and the Reflective Model. Each of these models subscribes to a philosophy of thought and a set of principles.

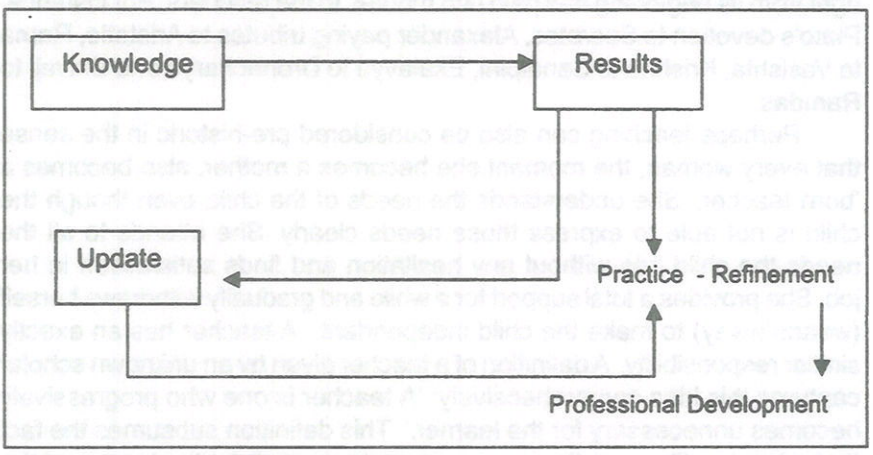
2.1.1 The Craft Model

This model considers teaching largely as a skill based model. This can be traced back to the days when professions were family based and were inherited. A son was apprenticed by his father and thus learnt the job. The father who recons his son is ready to begin to learn skills of hunting does not order him to accompany him (Farrant 1993). The principle involved was one of imitation (supported by the Behaviourists) and the theoretical inputs or the knowledge imparted was kept to the minimum.

There was no scope for advanced knowledge.

2.1.2 Applied Science Model

This mode of training can be ascribed to the school of cognitive psychologists who paid a premium to knowledge and thinking. The learners (or trainee teachers) are expected to apply the knowledge gained from another source and look for the results such application can produce. Further, they would feel the need to upgrade their knowledge constantly to improve the results without ignoring the importance of practice. Schematically represented the model can be shown as follows:



2.1.3 Reflective Model

This is a more recent development where the premium is on self-development. A teacher constantly needs to reflect on his/her own practices so as to move further. In this model, a learner is taken to a new field of learning from an area he/she is familiar with. This is based on the principles of schema theory which states that the knowledge to be acquired depends on the knowledge of the world we have. In this process of learning, a learner keeps constantly inventing or discovering new knowledge which keeps the level of interest (motivation) to learn high. The learners have a sense of adventure while solving the problem based on their schema and this process becomes a continuous cycle of practice and reflection. The development here would be dynamic as the learners often find their own solution to the problems.

These three models of teacher development have a hierarchy about them both in terms of chronology and development of knowledge. The Craft Model which is behaviouristic in nature focuses on skills development, while the Applied Science Model focuses on developing the learner's ability to think and the Reflective model focuses its attention on problem solving and discovering knowledge. The first two models follow a top-down principle whereas the Reflective Model largely follows a bottom-up

principle. This discussion brings us to the distinction that exists among the use of the terms 'teacher training, teacher education and teacher development.' Today, teacher development has attained a stable status. It is essential that we take a critical look at this process and suggest ways of further progression. The next section of this paper attempts to highlight the types of changes envisaged in teacher development.

3. Need for Professional Development

Craft Model, as one of the models of teacher training, is perhaps the oldest recognised model of formal teacher training, which believed in the transfer of profession as a matter of heredity. By this law of natural selection, it would be easy for the son of a teacher to become a teacher, and we know from experience that such inheritance is far from truth today. Teaching is now considered as a profession on equal terms with other professions such as that of doctors, engineers, tax consultants, lawyers etc. It is in this context that we need to understand the terms training, education and development in the context of teaching.

Farrant (1993) outlines the following features as essential for a teacher to be a professional: A teacher should be:

- friendly and cheerful
- kind and sympathetic
- interested in his pupils' interests
- patient with pupils who have difficulties
- hardworking and enthusiastic
- fair and without favours
- able to make the lessons interesting
- able to involve the pupils actively in learning
- able to explain difficult things clearly

Besides, a teacher should know:

- his job thoroughly
- the answers to pupils' questions
- how to do things his pupils' parents cannot manage

A good teacher training programme should incorporate all these factors or features and these need to be included in the supplementary training programmes to be taken up later in the career of every teacher.

While explaining the three crucial terms namely training, education and development, O'Breen (1986) says:

> In short the differences in emphasis which justify the use of all three terms is that while 'training' focuses on 'doing' and 'education' on 'knowing', the 'development' focuses on 'being'.

O'Breen's definition captures in essence the three models of training. Can the two terms teacher development and professional

development be equated? What are some of the differences? What additional features does professional development include?

These questions are briefly examined in the rest of this section.

3.1. Professional Development

Professional development of teachers constitutes developing awareness about their role and responsibilities to the profession they are pursuing. It is often self-directed, involving reading, critical reflection, conscious analysis of oneself and one's own work and a keen observation of learners and learning strategies (Singh, 2008). To help teachers develop professionally, it is necessary to provide support by formulating conducive policies, offering incentives and most of all understanding of their problems. All teachers could be encouraged to involve in one or more of the following activities, which support a teacher to develop professionally:

i. forming teacher development groups (TDGs)
ii. taking up action research
iii. improving their competence through open distance learning (ODL)
iv. using ICT based courses for their self-development.

Each one of these factors is discussed in detail in the next section. Before doing so, it would be essential to look at factors involved in teacher development and the differences that exist between teacher development and professional development.

Teacher development is a holistic term used in teacher preparation programmes. A programme in teacher development should cater to the developing of the right skills, proper attitudes and adequate knowledge to implement the skills and attitudes developed in the work they do. Teacher development like professional development could be a lifelong process which demands on the part of the teacher commitment to the work. Teacher development is contrasted with teacher training and teacher education which can both be offered by outside agencies, while development can happen only by one's own involvement (Wallace 1991). Teacher development can also be perceived as a sense of maturity that the teachers gain in the course of their profession after acquiring the necessary skills and the basic content. In this sense, teacher development is a precursor to professional development and there are quite a few areas where there is an overlap between the two.

3.2. Societal Participation in Teacher Development

In a country with more than six million teachers, it becomes the responsibility of the nation to promote teacher development in a sustained manner. All the Education Commissions since independence have highlighted the need for formulation of policies regarding teacher

development. Kothari Commission (1964-66) unequivocally suggested such a measure but precious little has happened to date. This was reiterated in vain by the National Policy on Education (1986). To give necessary fillip to the recommendations made by various Commissions, teachers also need to contribute to the growth of their image in the society by adopting certain professional attitudes such as attending to work sincerely, caring for the syllabus, fulfilling all the responsibilities, gaining the confidence of the learners by bearing an impartial attitude, showing a concern that is similar to that of parents. National Knowledge Commission in its recommendations on School Education has also highlighted the need for restoring of teacher's dignity, which can be restored only when the administrators stop burdening the teachers with additional duties such as working as census enumerators, polling officers etc.

In short, teacher development pays attention to the actual job requirements that happen within the four walls of the classroom while professional development goes beyond these borders and looks at a teacher as a member in the service of the society at large. Thus, the responsibilities and the demands made by the professional development are far more rigorous than that of teacher development.

With this discussion it would be appropriate to take a look at the factors that help teachers in professional development.

4. Factors Involved in Professional Development

In the previous section, the meaning of professional development and the factors contributing towards such development were discussed. In this section, an attempt has been made to take a close look at each of the four contributory factors in some detail and also find out the reasons for teachers' motivation to develop themselves. The reasons stated here supplement the reasons stated earlier and further reinforce them.

4.1. Teacher Development Groups (TDGs)

The concept of Teacher Development Groups emerged in England – International Association of Teachers of English as a Foreign Language (IATEFL). The large organisation that it is, IATEFL made provision for teachers with similar interests to come together, and these groups came to be known as SIGs (Special interest groups). This experiment has been greatly successful, and has extended beyond the realms of IATEFL, and is also emulated by Indian teachers working in certain localities. In India, the SIGs, known as TDGs, provide a forum to the teachers to come together and discuss their academic problems. Teachers working under similar circumstances share similar problems and their coming together can help them in solving the problems as well. The problems that could be discussed concern classroom strategies, teaching materials in use, learner problems, learner attitudes, coping strategies, cooperative teaching etc. TDGs can also work as pressure groups and influence the policy

makers thus realising the bottom-up process of decision making. TDGs also provide an opportunity to the members to publish their write-ups thus giving a boost to their self-esteem. Some of the TDGs working successfully in India are FOCET (Forum of College Teachers of English, Bangalore); ELTIP (English Language Teachers with Indian Perspective); Vallabh Vidyanagar, Gujarat; ELTAI (English Language Teachers Association of India, Chennai). The main function of sharing and discussing problems with each other is indeed a good exercise in reflection which is fundamental to professional development. TDGs in India are in their nascent stage, yet they have helped several teachers grow professionally, and if they are properly supported by the authorities, their contribution can increase manifold.

4.2. Action Research

This is an important aspect of professional development. Action research refers to a self-directed research which is highly context specific, classroom based and teacher conducted (Johnson and Johnson 1998 and Richards and Farrek 2005). In pursuing Action Research a teacher identifies a specific problem related to his/her class. The problem could focus on learning difficulties, unsuitability of materials, recommended teaching methodologies, problems of discipline among many other things. The main aim of action research is to solve a problem rather than simply undertake research for its own sake. Action research follows a definite procedure which can be stated as follows: identifying the problem; hypothesising (thinking of a possible solution to the problem); designing an action plan; implementing the action plan; and verifying the results or establishing validity of the action plan (McNiff, 1988). Action research allows for reflection for in hypothesising and developing the action plan a teacher needs to reflect. This reflection is further carried to the last stage where a teacher may need to revise his/her action plan depending on the circumstances and the results achieved.

4.3 Open and Distance Learning

Given the socio-economic scenario in India, it has become essential for people to take up jobs, and particularly that of teachers without receiving adequate training. Such teachers are underpaid and grossly exploited by managements of private schools. Many of these teachers get motivated to execute their work properly and also receive the necessary training while on job. This would further ensure their jobs being regularised and help them receive salaries according to the scales recommended by the respective state governments. But opportunities to pursue their educational pursuits are not available and when available are far and few. This section discusses some of the facilities available in India to teachers to develop themselves professionally. Here, the term professional development acquires a narrower meaning of possessing the necessary qualification in terms of skills, knowledge and content.

After Independence in the 1960s, before the pre-service training became mandatory to obtain a job as a teacher, in-service training was offered during summer vacations. Later formalised teacher training in the form of vacation courses was introduced by the NCERT on an experimental basis in the early 1970s. This course benefited several teachers to acquire degrees in education (B.Ed.) and had their jobs regularised. The course spread over fourteen months was called two-summer B.Ed. course. In-service teachers were asked to register for the course in the month of April in a particular year and attend eight weeks of contact programme. During this period necessary contents were provided. At the end of the contact programme, each student teacher was given the support materials (in print form) to read and work out assignments during the next ten months. During this period, student teachers were also expected to teach a certain number of lessons under the supervision of a senior teacher in their own school. These lessons were assessed and reports were sent to the NCERT. Once again, the students would attend a second contact programme of eight weeks in the months of April and May in the following year. This contact programme would end in examination and certification. This useful measure to help teachers receive training has been a fairly successful programme.

There are several universities which offer teacher training courses through distance mode. These courses replicated the conventional courses and are popular more for not very valid reasons than right reasons. Subsequently, most of this course had to wind up for want of recognition. Open universities like IGNOU (Indira Gandhi National Open University) have brought about a change in the structure of their teacher training courses by making them modular. Though there has been no systematic study of their success, the enrolment figures speak for their popularity.

Open Distance Learning has the potential to offer help in several ways other than just provide teacher training. In fact, these courses could become non-formal and focus on specific aspects of teacher development as well as professional development.

4.4 ICT-based Courses for Self-development

Computer has been a recent addition to the field of education and within a short period, it has occupied a prime of place, as an important tool of teaching-learning process. Use of technology has been rapidly changing and the present form is available in the form of Information and Communication Technology or ICT for short. ICT employs a range of tools and resources to communicate, disseminate, store and manage information (Tinio 2003). ICT has been fruitfully harnessed to teaching for the following reasons:

i. It allows a learner to make his/her own decisions about learning. Decisions such as what to study and how to study necessarily need to be taken by the learner. ICT enfolds within itself a fund

of resources for the learner to choose from, and hence the choices are plenty, which also make it essential for the learner to take proper decisions.

ii. In the course of learning when the learners make errors, they generally meet with disappointment. Such situations could also account for loss of their self-esteem. ICT provides the learners with a chance to interact with the experts (teachers) on topics/ contents they do not understand without any fear or shame, and also repeat their request more than once. ICT has the facility to repeat the recorded responses and this can be played back any number of times without alterations.

iii. ICT provides the learners with a novel way of learning. It provides for a variety of presentation of materials in the form of written texts, audio-video texts and interactive texts. Besides interacting with the text, ICT also provides an opportunity to the learners to interact with each other through emails, chat rooms, conferences and blogs.

iv. ICT can achieve all the four major objectives of Educational Technology such as:

- Provide every learner with a teacher
- Give opportunity to every learner to learn at one's own pace
- Minimise the wastage of learning
- Promote self-learning

Given these features, ICT is eminently suited for teacher training and teacher development. Training programmes based on modular curriculum and ICT makes the task of administering such courses easy. However, ICT makes certain demands on its learners. Learners need to be mature enough to take decisions on what to learn. They should be able to negotiate their way through the syllabus. All learners should be highly motivated and the motivation needs to be more integral than instrumental. Further, the learners should possess a sense of integrity or be able to accept their errors and be prepared to repeat learning steps without feeling fatigued. It is lack of these qualities among learners that accounts for high drop-out rates both on ODL and ICT based courses.

4.5 Role of Supervisory Staff in Professional Development

Role of supervisory staff in professional development cannot be undermined. A supervisor who is able to recognize the good work put in by a teacher and provide proper encouragement (in the form of incentives) plays a substantive role in helping a teacher develop professionally. Education Commissions beginning with Mudaliar Commission (1948-49) to NCF (2005) have all delineated the role and functions to be performed by the Principal and the supervisory staff. Though many of these roles are put to practice, a few of the crucial ones are merely observed in principle.

This aspect is discussed in detail in the book elsewhere.

5. Managing Professional Development and Follow-up Measures

One of the oft-quoted dictums on any training programme is that "training is a beginning of knowing how to do things; it is not an end." This dictum cannot be more true of teacher training and professional development. The pre-service teacher education largely takes care of teacher training while the in-service training programmes have to go beyond their brief and incorporate professional development. The National Knowledge Commission in its report on School Education discusses in detail the need to strengthen our pre- and in-service training programmes.

Managing professional development is the responsibility of the entire society rather than an individual teacher or an institution where a few teachers work. An educator today needs support as a member of the learning community which includes colleagues, parents, students and the community at large (Tileston, 2004). Therefore, while planning a professional development programme, it is necessary for the course designer to take into account the needs of the contemporary society and the fabric it is made of. In brief, a professional development course should include:

5.1 A System of Values Commonly Upheld by All Members of the Society

These values may change from society to society and a course designer should be both aware of such differences and also sensitive to factors that may affect all or some of its members. This is indeed a daunting task, and often a course designer depends on the dictum 'average as the positive' where the average is derived from a survey of a very large cross-section of the society in question. In this connection it would be worth recalling the tasks undertaken by the Boards of school education, NCERT, SCERT and others in drafting the syllabus. The problem becomes more acute when the syllabus needs to be rewritten in the form of course books for use by students and teachers. Course books do have the objective of inculcating values among the learners, and a good teacher training programme should help the teacher in this regard appropriately, i.e., making obvious to the learners the hidden values in the contents of the course book.

5.2 Tasks and Activities that Help Develop a Spirit of Cooperation

In fact, concepts such as 'Cooperative Learning' and 'Language Across Curriculum' are becoming popular in today's world of education. No subject can be taught in isolation and the strict compartmentalisation of subjects and teachers can no longer be a healthy practice to follow. The in-service programmes which have professional development as one of their objectives should promote cooperative learning/teaching strategies.

5.3 Tasks and Activities a Teacher Expects the Students to Do

Literature in Education defines a teacher as 'X+'. In this definition 'X' represents the expected level of competence the learner needs to achieve at the end of a course. A teacher teaching the course should have a competence that is a little higher than what is expected of the learners. This is a justifiable and an essential demand. Such competence helps the teacher to guard his/her self-esteem and also gain the confidence of the learners. Take for example a teacher who is not adept at dissection. He/she cannot be a successful biology teacher, despite all his/her sound theoretical knowledge.

A professional development course should also help the teachers to involve their students in activities with love and care. The type of cooperation that is envisaged among the colleagues should also extend to the students. A renowned teacher educator said this of methodology:

> *There is no method of teaching better than love. Love has three components – love your students, love your job and love your subject. The only teaching aid you need with this methodology is the smile.*[1]

A bond of love between the teacher and the student is bound to develop a sense of cooperation and this can have far-reaching effects on the quality of learning.

A well-designed in-service programme could take care of these factors. Section 6 of this paper discusses in detail the structure of existing in-service programmes.

As said earlier, no training programme is complete in itself. Each training programme should have a follow-up strategy and this can be done either through using feedback formats, keeping a tab on the trainees by creating a data bank, (index cards) visits by trainers, letters, e-mails, knowledge updates etc. In other words, every training programme should carry a warranty with it, and each trainee should feel that he/she can get back to the trainer again in times of need. How to organise these follow-up programmes is discussed in the next section of this paper.

6. Structure of In-Service Training Programmes

This section discusses the structure of the in-service programmes envisaged and in particular the component that takes care professional development. The nature of in-service programmes, how they are designed, and what is needed in the present day context have been discussed. The section concludes with a discussion on the follow-up strategies in existence as well as other possibilities.

6.1. Designing In-service Programmes

Any course design conventionally follows the same steps as curriculum design. It needs to begin with needs analysis. Often in-service programmes are thrust on institutions and the time gap between the announcement of the programme and its implementation is very short. This leaves little time for the organisers to undertake the task of needs analysis either by conducting a survey or any other means available to them. Generally, the organisers assume certain needs and a course is put in place in a hurried manner and offered to fulfil certain administrative obligations. Good needs analysis leads to formulating the objectives which further give directions towards the course contents and the methodology to be followed. A course design concludes with a suggestion of strategies to be adopted for evaluating the course as well as the participants on the course. This can be called a classical model for it has been in use for a long time and has been found to be working fairly efficiently.

Presently in-service programmes ('INSET' for short) are offered to teachers both at school and college levels. Though there has been a concerted effort on the part of the Government to provide INSET to all the teachers, with the number of teachers who need to be trained it has not been possible to organise these programmes successfully to saturation levels.

In describing an INSET programme it may be worthwhile to mention a few of the successful experiments and elaborate three of them as examples.

i. The University Grants Commission (UGC) has been organising Refresher Courses and Orientation Programmes for college and university teachers. Every teacher at this level needs to attend three courses before becoming eligible for further promotion. (Lecturer to Reader and Reader to Professor). UGC has established special institutes in many of the universities across the country. These are called Academic Staff Colleges (ASCs, for short). Both Refresher Course and Orientation Course are of three-week duration with a minimum of 108 instruction hours.[2]

Refresher courses are organised for homogeneous groups in the sense that all the participants belong to the same faculty. The focus is on updating knowledge and also to seek clarifications from experts on the problems that the teachers may have. The orientation programmes on the other hand, have participants from different faculties and their focus is on teaching techniques or professional development. However, these courses have lost their true purpose, for the motivation to attend these courses is more instrumental than integral.

Today there are adequate number of ASCs in the country to offer the training programme. But there are a few lacunae which need to be addressed urgently. Foremost among them is the lack of properly trained trainers. Trainers to work on Refresher Courses are outsourced by ASCs, and most of these trainers are senior practising teachers in the field.

Further, a trainer is chosen based on personal relations and friendship the Director ASC or the course coordinator has with the resource persons. Such choice of trainer also affects the quality of training imparted. To resolve this problem, a special cadre of trainers have to be identified who can take up this job more systematically. Examples can be taken from Corporate Houses who have their own training centres with highly qualified and professional trainers.

Second among the important factors is to develop strategies to meet the demands of a large number of teachers who need to receive training. A recent survey conducted (at the end of X Plan period) revealed that there were 220,000 lecturers working in colleges and universities.[3]

Half of these teachers were employed either on contractual basis or ad hoc basis. These teachers have been working for reasonable long periods of time and yet they are not considered eligible to attend training programmes in ASCs. It is these teachers who need training the most and they can do so only when their status changes. The problem of numbers can be overcome by adopting cascade model of teacher training and also taking support from electronic media as well as web based training programmes. The country-wide classroom programmes aired by UGC and CEC can be fruitfully employed for providing in-service teacher training programmes. This has a wider outreach and the fact that the telecast is available 24x7 is a factor in its favour. The same programmes are re-telecast to facilitate teachers who might have missed watching a programme when it was aired the first time. Further, this gives scope for discussion among the colleagues which in itself is a contributory factor to professional development.

It is difficult to discuss the structure of a refresher course or an orientation course, for different ASCs follow different models, and even within a given ASC the model changes from time to time, depending on the course coordinator as well as the motivation and the degree of involvement shown by the participants.

ii. Another successful INSET programme was launched by the Central Board of Secondary Education (CBSE) when they undertook a project on curriculum reform in the year 1989. As a result of this project, new course books were introduced in all the CBSE affiliated schools across the country in classes IX and X. These series were based on a new language-teaching syllabus and were called 'Interact in English'. The course books were produced by practising teachers who received specialised training at Marjons College of Education, Plymouth. The practising teachers also produced training manuals and evaluation packages. When these books were introduced, rightly it was also felt necessary to train teachers to use the new package. A massive training programme was undertaken across the country involving all the teachers of English teaching at the secondary school level. A cascade model was used to maximise the outreach of the programme and almost the entire population was covered in the course of about three years.

Each training programme was of ten days duration and the contents included helped the teachers become aware of the design of the package and the methodology to be adopted for teaching. The methodology subscribed to the School of Communicative Language Teaching (CLT), and it made the teachers aware of classroom situation, involving learners in the process of learning, adopting a friendly attitude, making tests learner friendly, adopting procedures of continuous assessment etc. Though personality development was not an obvious input, at the end of the training programme there was a perceptible difference in the behaviour and attitude of teachers. Teachers learnt not only to use group work in classes but also how to work in groups themselves; they learnt the art of developing authentic materials, to relate classroom learning to life outside and in short it was lifeskills that they were taught. A true course in professional development could have a design comparable to this.

iii. There has been a sustained development programme for English teachers sponsored by the Ministry of Human Resource Development since 1985 during the VI Five Year Plan. These programmes are designed to train teachers at the secondary school level. The entire project, called the District Centre Scheme, is funded by the Central Government and monitored by the erstwhile Central Institute of English and Foreign Languages, Hyderabad (At present The English and Foreign Languages University). The training programme is offered at two levels, at the level of trainers and at the level of teachers.

Trainers are selected on the basis of experience and competence in teaching by the District Education Officer. Annually, a three-month programme called Resource Person Training is offered to the selected personnel at Hyderabad. The programme has two major parts focussing on competence development and professional development. As part of competence, the teachers are given inputs to develop their competence in the use of English as well as the course contents they need to handle at the training centres. The professional development takes care of their ability to train people, design training programmes and maintain records to design follow-up programmes.

The Resource Persons' Training Programme, spread across 12-weeks (three months) has the following structure. The first six weeks are devoted to the development of proficiency or teachers' competence in the subject concerned. For English teachers, the following courses of study are prescribed:

- Principles of Language Teaching
- Phonetics and Spoken English
- Modern English Grammar and Usage
- Producing Materials for Language Teaching
- Study Skills
- Reading
- Writing

During the second phase (or weeks 7- 12), the participants are asked to conduct two different types of training courses. During this period, the teachers are trained to become trainers, and in the first two weeks they are helped to understand the concepts involved in training and framing objectives for a need based course and deciding on its structure and content. Of the two types of programmes (one 10-day general teacher training and two 1-day need based programmes), one programme is held while the other programme is organised independently without the help of the teachers. The participants are encouraged to work in groups in organising both these training programmes. Working in groups helps them develop team spirit and they also imbibe principles of cooperative learning and teaching.

6.2 Follow-up Strategies in Existence

A systematic follow-up programme at the end of in-service programme does not exist today. However, some institutions engaged in conducting training do provide a packet to each trainee at the end of the training programme. Apart from the feedback sheet, and reading material, the packet also includes a few inland letters to help the participants to keep in touch with the trainees. This to a certain extent helps the trainer keep a tab on the trainees. However, the feedback received in this case is not 100%.

There are also institutions where the trainers are sent to the schools/ colleges where the trainees have been working after the completion of the training programme. Trainers who visit the schools observe the work put in by the trainee and offer feedback and suggestions for improvement. Though this is a better form of follow-up, it is not economical both in terms of time and money.

New strategies need to be thought of based on which the follow-up measures can be planned and executed.

7. System Support and Adult Learning

An in-service programme is not likely to be successful without adequate system support. It is by taking appropriate policy decisions that proper societal system can be created which can help an institution design and implement a comprehensive training programme. In order to do this, some of the features of adult learning, (as stated by Richards and Farekk 2005), shall have to be taken into consideration.

Adults are in an advantageous position to learn for they are sure of their needs and are motivated to learn. Most of the adult learning is self-directed, and, if instruction is necessary, it needs to be individualised. Adults prefer experiential learning where they are given certain responsibilities and the learning task is in the form of problem solving. Often, the adults also adopt cooperative and collaborative strategies to learn.

These factors provide clear direction to the course design and these concepts are also supported by the responses elicited from the teacher educators.

7.1 Suggested Outline of In-service Programme

An in-service programme designed on the basis of general needs of the teacher and with the objective of professional development may have the following structure:

a. *Learners:* Any practising teacher should be eligible for the course.

b. *Objectives:* At the end of the course, the trainee teachers should be able to:

- develop proper attitude towards their profession (values)
- learn to treat their learners with love and affection.
- take care for syllabus and curriculum (accountability).
- fulfil all the responsibilities related to their duties.
- motivate to update their knowledge from time to time.
- become aware of resources for updating their knowledge.
- value time as an important factor in their own life and life of their learners.
- become aware of the latest developments in teaching techniques.

c. *Course Contents and Methodology:* The course should have a series of case studies in the form of problem solving tasks to achieve the objectives stated above. The problem solving tasks need to carry out in groups. This would help them develop team spirit which also provides them with a sense of responsibility and cooperate with other members of the team. This is further supported by theoretical inputs in the form of lectures and discussions.

d. *Evaluation:* Evaluation in an in-service programme should not be normative. It needs to be often informal and largely based on tutors' impression. The feedback received also could indicate the range of achievement by the trainees or participants. The programme suggested would also have an informal assessment based on classroom participation in tasks, discussions and a general impression of the tutor. The evaluation, it is suggested, could be supported by allowing each participant to take up a project and the project report could be assessed to place the participants and also provide proper feedback. However, care should be taken not to hurt the sentiments of low performers, and this should be the guiding principle in all in-service programmes.

e. *Follow-up strategies:* All in-services programmes as mentioned earlier should have a warranty period. All trainees should develop enough confidence in the tutors to approach them without any fear or hesitation. Further, all channels of communication such as letter writing, telephoning and e-mail should be kept open and the trainees should be encouraged to remain in touch with the trainers.

Every training institute should also create a data bank which could keep a record of all the trainees giving details of their qualifications, teaching experience, strengths, weaknesses, aptitudes and any other relevant information that may be necessary. Maintaining such records also helps an institute to conduct further training programmes and also employ some of the better trainees to train others. This will help in reaching out to more teachers and thus, give a boost to the much needed professional development.

8. Conclusion

The paper takes a look at the concept of professional development and establishes how it is closely related to teacher development. Further, it provides samples of some of the in-service programmes available in the country which have professional development as their unstated objective. The paper concludes with a suggested draft outline of an in-service training programme which takes care of professional development.

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Notes:

1 Prof. HNL Shastry in the course of his lectures on Teaching Methodology at the CIEFL often mentioned this. There is a lot of truth in this statement even in the present day.

2 Both Refresher Courses and Orientation Courses began as UGC Summer Institutes which were of four-week duration. These were organized in University centres and senior teachers were used as trainers. Very often this was a repeat advanced MA/M.Sc. course.

3 This survey was conducted by the faculty of Academic Staff College attached to Hyderabad University and reported by Dr I Ramabrahmam, former Director ASC.

Chapter 17

Public Private Partnership in Teacher Education

SHRI PRAKASH

1. Introduction

First, we need a proper understanding of the adjectives, 'Public' and 'Private' that qualify partnership. Technically, Public refers to the Ownership of and Management by Government and its Agencies, while Private stands for the Ownership of Enterprises and Institutions and their Management by Individuals/Households. Partnership refers to joint ownership of and management of operations by two or more parties. Public-Private Partnership (PPP) in Teacher Education should, therefore, refer to the joint public-private ownership and management of the operations of institutions of teacher education. Adjective Joint should not be construed to denote the joint ownership and management of the same entity by public and private agencies, though it is both a theoretical and practical proposition. Several Kendriya Vidyalayas (KVs) have local Management Committees, having local non-government representatives, though the ownership vests with the government. In the wider sense, PPP in teacher education refers to the shouldering of responsibility of establishing, developing and managing of institutions of teacher education both by public agencies and private enterprise. As teacher education is a part of larger system of education, PPP in teacher education is also a part of the role and functions of private and public sectors in the all-round development of educational system. Therefore, consider PPP in teacher education in the context of overall development of the system of modern education.

Gigantic dimension of the task of managing teacher education may be gauged from what has been observed in the Eleventh Five Year Plan. "India's educational development is a mixed bag of remarkable successes and glaring gaps. Out of 200 million children in the age group of 6-14 years, 42 million children do not attend schools." "There are problems of

high drop-out rates, low levels of learning achievement and low participation of girls. Coupled with this, are various systemic issues like inadequate school infrastructure, high teacher absenteeism, large scale teacher vacancies, inadequate equipment like teaching-learning material, etc." (Chapter VII). We may add the concerns of teacher education to these problems. It is essential to ensure that supply of trained teachers keeps pace with the exponentially growing enrolments and ever-increasing number of schools that tend to keep the demand for trained teachers ever-bulging. This makes it necessary to consider PPP in teacher education in the wider context.

There is another reason for considering PPP in teacher education as a part of the education system as a whole. There may be few colleges that exclusively service teacher education because such colleges may not be financially viable. Financial viability of a college exclusively for teacher education is constrained by limited number of enrollees. First, there are restrictions on intake capacity and secondly, only a fraction of graduates chooses teaching as profession. This could be better appreciated in the backdrop of the historical evolution of modern education in India.

2. Historical Evolution of Education in India

Dissatisfaction with education under the British rule in independent India was almost universal. Western Education was introduced in India by the colonial rulers in the first half of nineteenth century. However, initial attempts did not succeed much. The main objectives were to prepare (i) Indians to share the responsibility of administration; (ii) elite of Indian society to lend support to the British rule in India; and (iii) familiarize Indians with the language, culture, values, traditions and great men of the United Kingdom. Naturally, government was responsible for popularizing and governing English Education in India. English education was meant to be the education of classes rather masses (Prakash, 1993). But people treated education as a passport to government jobs. Thus, people's view of education co-incided with its public perception.

Elitist approach of government to education restricted it to big urban centres, leaving towns, semi-urban areas and villages to go without the facilities for education. Direct link between education and jobs generated demand for government jobs through education, though access was confined hardly to 0.5 per cent of population. Cleavage between demand for and supply of places in public educational institutions induced community leaders to come forward to shoulder the responsibility of establishing and governing educational institutions for their own communities, leading to the sprouting of private institutions named after religions, castes and even after the names of heroes of particular communities (Prakash, 1977). It is not an exaggeration to say that private sector played as important a role as public sector in the development of

education in India during pre-independence period. This laid down the foundation of PPP in education, including teacher education. Private sector has continued to play an important role in educational development of the country in post-independence era as well, though it has come under strict control of the government.

Consequently, the objective of free and compulsory Universal Elementary Education (UEE) by 1960 was adopted as an essential component of the Directive Principles of the Constitution. Though target dates of the realization of this important objective has continuously been shifted plan after plan, lot of progress has been made. It is now expected that elementary education for children of 6-14 years age group would become universal by 2011. The realization of above goals, including UEE, made the government not only to shoulder the responsibility of development of education but also to disperse educational facilities throughout the length and breadth of the country. Public investment in education always propelled private investment, both individual and institutional (Prakash, 1993). It is still happening in India. Massive expansion of education in general and elementary education in particular stretched public resources to the limit. The provision of even minimal necessary flow inputs of education under severe resource constraints led to the dilution of stock inputs. This compromised quality though quantitative expansion has been well taken care of (Prakash, 1977). Since the adoption of the National Policy on Education (1986), planning has focused on consolidation of quantitative gains and qualitative improvement.

Education has progressed phenomenally in India since independence. It has grown ahead of economy and population. Expansion of science, technical and professional education has received great impetus from state policy. In 1950-51, just 37 per cent of all students in the age group 17-23 years, who were enrolled in arts, science and commerce courses, offered science subjects. This percentage rose to 40 in 1965. From 1950-51 to 1964-65, enrolments in arts and humanities increased by 241.99 per cent, whereas enrolments in science and technology rose by 243.81 and 363.64 per cent. In spite of almost astronomical growth of enrolments in technical and professional education, imbalance between facilities for general, technical and professional education was highly accentuated. Ratio of students enrolled in courses of general education to those enrolled in technical and professional education in 1950-51 was 28.1:1 which rose to 32:1 in 1970-71. Thus, *growth of technical and professional education lagged behind that of general education.* Development of general education outstripped the growth of its demand, while growth of technical and professional education, including teacher education, could not keep pace either with its demand or growth of general education. Consequently, Indian educational system suffered from serious structural disequilibrium. Some institutions, especially those for technical and professional education in metropolitan areas, experienced enormous pressure of excess demand most of the time, most

institutions in small cities, semi-urban and rural areas operated at sub-optimal level due mainly to want of demand. This is the consequence of mal-location due to widespread spatial dispersal of facilities. This is true not only for general but technical and professional education also. Despite this, gains of quantitative expansion accrued mainly to the relatively prosperous rather than the poor.

Enrolments in technical and professional education in 1971 increased about 75 times over 1951. These are highly impressive achievements for any economy which has been so short of capital as India. An interesting feature of Indian educational development is that higher stage of education has a tendency to grow faster than its lower levels. It is explained by: (i) resource requirement of higher and technical education is many times more than that of lower education as enrolments remain relatively low; and (ii) lower base value leads to higher growth.

During this period, educational expenditure also increased at high rates. Total educational expenditure, both from public and private sources, was Rs. 674.26 crore in the first plan, Rs. 1,357.78 crore in the second plan and Rs. 2,478.86 crore in the third plan. Thus, outlay on education increased by about 101 and 268 per cent during the second and the third plans over the expenditure incurred in the first plan. Relative to national income, educational expenditure increased from 1.2 per cent in 1950-51 to 2.4 per cent in 1960-61, to 2.9 per cent in 1968-69 and to 3.4 per cent in 1970-71. Even then the proportion of national income spent on education, per capita educational expenditure and cost per student in India continue to be among the lowest in the world. Interestingly, growth of educational expenditure has been much more rapid than the growth of national income and population. However, growth of expenditure has lagged behind the growth of enrolments.

Among other things, educational facilities on the eve of independence were limited to urban centres and rich segments of population. Education was the privilege of a few fortunate urban elites. Democratic Government based on adult franchise warranted mass education and eradication of wide-spread illiteracy. Secularism, based on protection of the rights of minorities and composite culture, needed support of the educated so as to facilitate attainment of social and political integration.

Education has to play a pivotal role in achieving these objectives by altering traditional attitudes, special irrational beliefs, and mindset of the people. Planned programmes of economic and social development for the establishment of a socialistic pattern of society needed social and economic justice. Reduction of social and economic inequalities was the prime objective of State activities.

Indian planners considered education as an agent of social and economic change, as it creates desire for and facilitates attainment of better quality of life and higher standards of living. Inequalities of education not only lead to the creation of economic inequality but also to their transmission from one to another generation (Prakash, 1994). Therefore,

development of education has to precede rather than synchronize with or follow economic development (Prakash, 1977). The proclaimed goal of raising the standard of living of masses through planned economic and social development required linkage between education and productivity. It needed science, technical and professional education, on the one hand, and the nurturing of talent at all levels through training and education, on the other. Equalization of educational opportunity through the provision of facilities of education for girls, rural areas, Scheduled Castes (SCs) and Scheduled Tribes (STs) and Other Backward Classes (OBCs) were important elements of the state policy. So, the important objective was to raise the qualitative standards simultaneously with quantitative expansion. It was recognized that expansion of education and training facilities should be closely related to future requirements of economy. 'Growth of educational facilities in those directions which may further accentuate the problem of unemployment among the educated' were to be avoided. Need to treat manpower planning as an integral and inseparable part of economic planning has been among important objectives of Indian planning.

In initial phases of quantitative expansion under five year plans, institutions were established without buildings, infrastructure and even properly qualified and trained teachers. Teacher education institutions in pre-independence period were extremely limited in number and their location was also limited to a few selected metros and big cities. Consequently, many schools operated from tents or even open spaces, while even non-matriculates were engaged as teachers, appointment of trained teachers was beyond reach, since Institutions of teacher education, and hence, teacher educators remained short in supply relative to demand. The recognition of the gap between supply and demand for teacher educators gave stimulus to establish institutions of teacher education both in public and private sectors during sixties and seventies.

However, exploitation of teachers by private institutions led to public out-cry against their managements, forcing government to introduce and enforce stricter rules for recognition of new and wider regulation of existing institutions. This, coupled with public policy to provide incentives for attracting the gifted, motivated and committed persons to teaching as a profession, has led to perceptible improvement in the emoluments and working conditions of teachers.

The governments in various states in the late nineteen sixties introduced a sea change in education through the introduction of Hindi and regional languages as compulsory medium of instruction at all levels. All government institutions switched over to Hindi/regional languages as the medium of instruction. Policy was based on sound logic and profound principle of education, specially basic education. But adequate quality reading-teaching material could not be developed in Hindi and regional languages, leading to differences in standard/quality of education in English and regional languages medium. Elite middle and high income groups perceived it as the challenge to their privileged position and vested interest

in their domination of job market, especially public services. Despite policy directives, link between high salary jobs in government and public sector enterprises education through English medium could not be dented. Only class III and IV jobs could be accessed by those educated in non-English medium. This created duality in educational system. As high quality reading-teaching and learning material could not be generated in Hindi/ regional languages, this compromised the quality of learning-teaching as well as knowledge base of educators, including teacher educators. Consequently, a large number of the so-called private English medium elementary and secondary schools sprouted throughout the length and breadth of the country in the nineteen-seventies and thereafter.

As private investment in school education reached almost a saturation point towards mid-eighties, private enterprise turned to technical and professional (higher) education, including teacher education. Institutions of teacher education have flourished and continue to flourish, leading to bridging the gap between supply and demand for institutions of teacher education and teacher educators. Proliferation of such institutions in private sector led to recognition of the need for a regulatory authority of teacher education. The National Council of Teacher Education (NCTE) was established in response to this.

Some important concepts need to be considered to facilitate objective analysis of PPP in teacher education. The connotation of the term 'educational system' shall first be examined. For this, it should be understood what a system stands for and the features that distinguish one system from another. Social system, Political system, Economic system, Educational system, System of an organization and so on, are in place, however, the focus of the present paper shall only be on the Educational system.

In a literal sense, system refers to the arranging of elements pertaining to a given phenomenon or an entity in a definitive and hierarchical order. Technically, 'system refers to a set of rules that guide the institutionalization of the pattern of ownership, mode of governance, organization of set up and manner of operating a specific group of activities which are characterized by certain common features/facets. This is a general definition which may cover various systems. Educational system may also be defined along the lines of general definition of a system.

The adjective 'educational' stands for activities, rules and regulations, pattern and structure of organization of institutions associated with learning, teaching, research and regulation of the functioning of institutions. 'Educational system, therefore, refers to the set of rules that guide institutionalization of the pattern of ownership and governance of institutions of teaching-learning and research and the manner of organization of their operations, which are characterized by certain common objectives'. Educational system may, however, be likened to an economic system. Economic system comprises inputs, outputs and process of production, marketing, purchase and consumption. Both

consumption and production refer to a set of activities which need inputs to be transformed into outputs through specific process(es).

Educational system, like an economic system, has a set of production and consumption/use activities. Production of education service requires inputs to be transformed into output by the process of learning-teaching and research, on the one hand, and use of inputs for producing educational service(s), on the other. Educational system, unlike economic system, does not produce any material good; it rather produces educational service, the finished output of which is human resources. Man is the carrier of the output of education just as machines are the carriers of technology. Production of education service, like the production of goods and services in the economy, requires a set of inputs, which are transformed into output through a definite process associated with the education production function. Students and teachers are the most important inputs of education. Students enter educational institutions as raw materials and/or semi-finished material in process; after the completion of learning, the students come out as the finished good in the form of skilled and educated manpower to join the job market (Prakash, 1976). The production process of education transforms students, who enter educational system as inputs, into output (educated manpower). The production process comprises an educational production function which may use alternative techniques or technology of learning and teaching. Education also involves a cost function as the dual of its production function. Labour and time of students and teachers are its basic inputs. But education is a multi-product industry. Teaching-learning and research are as inseparable products of education as mutton and wool. Education prepares educated manpower and even more important than this is the research output of education; research generates new knowledge as its output.

The system of education has been owned and operated largely by the government all over the world (Prakash, 1993). This is despite the sizeable presence of private enterprise in education. The fact is that in the eighteenth century Britain, education was left solely to the care of private initiatives. It was the dawn of social welfare as state's concern that brought education into public domain. Insofar as Western education in India is concerned, it had been started by the colonial rulers in pre-independence era. Naturally, the government has been pivotal in its development. The government of independent India has an extensive ownership and control over education, on the one hand, and the responsibility for its development, on the other. So, the question is why PPP figures prominently both in policy and practice in India. Two interrelated factors explain the need for public partnership with private capital and enterprise in education, including teacher education: Extremely low base of education for development in independent India; and enormous amount of resources required to move it in desired directions and for the development to the desired level, on the one hand, and its wide spatial spread over the length and breadth of the country in order to mitigate

inter-regional and inter-personal inequalities, on the other. Teacher education was also required to grow rapidly with the rest of the system. Besides, rapid economic development through industrialization warranted equally rapid growth of education to meet the rising demand for educated manpower. So, the country needed balance between the growth of economy and education on the one hand, and balance between the growth of different levels and types of education on the other. Regional and inter-personal balances as well were over and above. Thus, India needed equilibrium growth of the system. But what is equilibrium of a system?

For analytical purpose, a system is envisaged to be in a state of equilibrium. Equilibrium is the standard or norm with which the actual state of the system may be compared so as to determine the degree and direction of divergence to devise and initiate corrective measures. But what is equilibrium? A working definition of equilibrium in order to identify the properties of 'an educational system in a state of equilibrium', is attempted here.

'A system is in equilibrium if it is in its most desired position and it is able to maintain itself in that state, subject to the constraints that it faces and the opportunities that it has to it to move forward on its growth path.' This definition refers to dynamic rather than static equilibrium. From this viewpoint, equilibrium of an educational system could be considered in the light of the aims and objectives that govern its operations. A dynamic system has a different set of objectives at different points of time as it moves along its growth path. The development changes the conditions, number and nature of problems and it also throws up new challenges. So, the continuous maintenance of equilibrium requires the system to successfully adapt and adjust to the changing conditions. This holds true for educational system also. Alternatively, equilibrium may be defined as follows: a production unit or system will be in equilibrium if its output equals demand for its product in the continuum of time and space.

Equilibrium of an educational system has, therefore, three aspects: it requires balance between: (i) the supply of and demand for places in educational institutions; (ii) the qualified manpower of various grades and types that the educational system produces and the demand that the economy generates for them each year; and (iii) demand for and supply of instructional and infrastructural inputs of education. Last aspect is as important as the first two. Past experience tells us that the supply of reading-teaching material has not only been delayed but it has often also fallen short of requirements due to lags in supplies. Similarly, shortages of such construction material as cement and steel obstructed the time schedule of construction of numerous university and college campuses in sixties and early seventies. Schools faced not only shortages of teachers but many of these schools had to operate from tents for years. Besides, shortages of manpower with specific levels and types of education and surpluses of graduates of general education characterized the job market for the educated from fifties to eighties. Such phenomena have resulted from unbalanced growth of education.

3. A Case for PPP Model in Teacher Education

Teacher education is a sub-system of education. Like equilibrium of educational system, equilibrium of its sub-system of teacher education has also three facets. Equilibrium of the sub-system of teacher education requires equality between: (i) number of places demanded for teacher education by admission seekers and supply of places by teacher education institutions; (ii) demand for teachers and supply of teachers coming out of the institutions of teacher education to the job market for school teachers; and (iii) number of teacher educators in job market, seeking employment, and job opportunities available in institutions of teacher education. Attainment and maintenance of three-fold balance is a complex and complicated task, which the autonomous market forces have not been able to accomplish satisfactorily anywhere in the world. Therefore, it needs advance planning. However, under the planned regime also, educational system, including sub-system of teacher education, was not able to attain equilibrium in any of the three facets/aspects required for it. When school education grew explosively in 1950s and 1960s, trained graduate and trained post graduate teachers were woefully short in supply. Consequently, untrained and even otherwise under qualified teachers were appointed, since pupils could not be taught without teachers. Single teacher schools and multi-grade teaching still abound. In order to cope with the shortages, U.P. introduced hybrid post-graduate courses in two subjects, one in each of the two-year programme. Such Master degree holders were qualified for lecturership in intermediate colleges. The problem of untrained and under-qualified teachers still bedevils school education in North East India. These facets of school education reflect not only disequilibrium of its own but that of teacher education also. This highlights two aspects: interconnectivity of different layers of education; and down-gradation of qualifications to cope with shortages. Second aspect lends credence to Amit Sharma's (2007) thesis that shortages are often met by the downgradation and surpluses of manpower and are adjusted by the upgradation of qualifications. Besides, both private and public sector schools were extremely overcrowded which adversely affected teacher-pupil ratio.

Impact of shortage of teachers still bedevils school education. The Pupil Teacher Ratios of primary and upper primary schools in 2004-05 were as indicated State-wise in Table 1:

Table 1 : State-wise PTR in 2004-05

State	1	2	3	4	5	6	7	8	9	10	11	12
PTR (Primary)	33	34	42	104	48	21	35	44	24	34	81	26
PTR (UP)	31	30	16	75	46	17	39	30	30	16	61	37
State	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
PTR (Primary)	28	43	37	30	44	17	19	53	43	49	22	33
PTR (UP)	27	30	37	20	16	8	16	44	19	34	25	41
State	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	
PTR (Primary)	54	58	25	54	20	41	62	43	40	21	24	
PTR (UP)	15	35	18	44	18	29	43	29	26	16	21	

S. No. of States: 1. Andhra Pradesh, 2. Arunachal Pradesh, 3. Assam, 4. Bihar, 5. Chhattisgarh, 6. Goa, 7. Gujarat, 8. Haryana, 9. Himachal Pradesh, 10. Jammu & Kashmir, 11. Jharkhand, 12. Karnataka, 13. Kerala, 14. Madhya Pradesh, 15. Maharashtra, 16. Manipur, 17. Meghalaya, 18. Mizoram, 19. Nagaland, 20. Orissa, 21. Punjab, 22. Rajasthan, 23. Sikkim, 24. Tamil Nadu, 25. Tripura, 26. Uttar Pradesh, 27. Uttarakhand, 28. West Bengal, 29. A&N Islands, 30. Chandigarh, 31. Dadar & Nagar Haveli, 32. Daman & Diu, 33. Delhi, 34. Lakshadweep, 35. Pondicherry.

Table 1 shows that at all India level PPT in primary and upper primary education was 46 and 35 respectively as against a ratio 40:1. The divergence between desired and actual ratios is the consequence of differential values of ratios for different states. As many as 14 states showed 42 to 104 for primary education. Number of states showing greater than 50:1 ratio was 6. For upper primary education also, 7 states showed a ratio of 41:1 to 75:1. Two states had a ratio of 75 and 61. Correction of this imbalance warrants an accelerated growth of output of institutions of teacher education in general and in given states in particular

Obviously, all above were the consequence of rapid growth of school education. This evoked response from the government both at the centre and states. Government did try to remedy the situation with its limited resources.

Colleges, both public and private, were allowed to offer B.Ed. courses in addition to the streams of general education they were already operating. This offered cost-effective solution, since exclusive colleges of education would have not been economically viable. Now, the B.Ed. courses are offered both by colleges of general and technical education. Incidentally, L.T. (teacher education programme), inherited from the colonial era, was replaced first by B.T. and then by B. Ed. Hence, the seriousness of the problem was dented to a great extent. As education has to compete with other socio-economic sectors for allocation of funds for planned development, resources allocated to education were always inadequate.

The target of allocating an amount equal to 6% of GDP to education, recommended by Kothari Commission (1964-66), could never be realized. So, the private sector has to be allowed to enter secondary, senior secondary and college education in order to supplement the efforts of public sector for the development of education. The result of resource constraints was that, while the flow inputs were taken care of, to a great extent, the stock inputs, specially instructional and infrastructure inputs needed for the maintenance of quality of education, had to be diluted (Prakash, 1977).

Private institutions of education, like other sectors of the economy, remained under strict control of the government in order to enforce the rules and norms. Entry into education sector without prior permission of the government was not allowed. Even if some institution started operating without prior permission, recognition and affiliation by the appropriate public agency was mandatory. But the private sector in education had played an important role in educational development in pre-independent India also. After the adoption of new economic policy in 1990-91, the government has sought active participation of private sector in all the segments of economy and society, including education. The Planning Commission has explicitly incorporated the promotion of public private partnership in the development of education. This is evident from the observations in five year plans. For example, this is what is stated in the tenth five-year plan: 'The Sarva Shiksha Abhiyan seeks functional decentralization right down to the school level in order to improve community participation. The qualitative participation should mean that community is able to have a voice and exercise its choice.' Besides, even though private initiatives have always been a part of school education endeavour, it has neither been large nor of a sizeable magnitude in the efforts to universalize elementary education. Private sector can contribute not only in monetary and material terms but also in the form of expertise for improving quality through effective management of the system and the development of locally relevant teaching-learning materials.

A synergetic public-private partnership would be built up during the tenth plan. Relatively greater success of efforts for UEE has resulted in manifold increase in institutions, teachers and students. This is obvious from the fact that the number of primary schools increased by more than three times from 2,10,000 in 1950-51 to 6,42,000 in 1999-2000, whereas the number of upper primary schools from 15 times from 13,600 in 1950-51 to 1,98,000 in 1999-2000, and the number of secondary schools increased from 7,416 in 1950-51 to 1,16,820 in 1999-2000.

Still the increase in the number of schools is not adequate. For example, 27 million children out of 96.6 million in 14-18 year age group were attending secondary school. Number of schools is inadequate to accommodate out-of-school children of the relevant age group in view of ever-increasing numbers from elementary education are now seeking admission in secondary and senior secondary schools each year. This

highlights the ever-rising need for PPP and demand for teachers even to maintain pupil teacher ratio at current levels, leave apart improvement in it. This also highlights the need for meeting the rising demand for teacher education in the country. PPP in teacher education will even be more important than in the past. Role of PPP may be gauged from the fact that private organizations managed 51 per cent secondary schools and 58 per cent senior secondary schools in 1999-2000.

However, the private sector in education still remains under public regulation. The end result of PPP has been the mushrooming of private institutions, specially those of higher professional and technical education, which has resulted in exponential growth of enrolments. Teacher education is no exception to this. The scenario of teacher education has also turned the corner.

Despite rapid growth of enrolments, it was reported that 25,000 trained graduate teachers, churned out of teacher education institutions each year, remained unemployed for varying duration of time towards the end of the eighties. It highlighted the need for planned development of teacher education. It may also be mentioned that the institutional location is as important as the establishment of institutions. Inter-state migration may play only a limited role in correcting regional manpower imbalances. However, there has been no defined policy of institutional location. This is even more important in case of the location of institutions of teacher education (Prakash and Shrivastava, 1991). An institution of teacher education should be a part of the cluster or complex of schools in the command area in order to avert the twin problems of shortages or surpluses. This is important because the job market for the educated functions in a cobweb like fashion with the result that the shortages of one period tend to be converted into surpluses of the subsequent period. This holds true for the job market for teachers and teacher educators also.

This makes planning for development an inevitable need. Planning, however, need not necessarily be the by-product of planning by command or centralization. The French style indicative planning, that is, planning by incentives may serve the purpose better than the planning by command and controls. The government is required to highlight the directions in which the system is required to move and expand and furnish guidelines for the same. Those who move in the desired directions may be supported by incentives for moving into right and penalties for movement into undesired directions may perform the job better. The task of planning is in the public domain. Planning Commission and other public agencies will then have to support and supplement the efforts of the private sector.. So far as teacher education is concerned, Planning Commission is assisted in this task by the NCTE.

After toiling hard single-handedly for four decades to accomplish the planned development of the society and economy, including education, and realizing that the regime of controls and licensing had started obstructing more than promoting growth, India adopted the New Economic

Policy under which Liberalization, Privatization and Globalization were envisaged to promote rapid growth of India. Education has, however, been opened up to private enterprise even before that. After the adoption of regional languages as the medium of instruction, English medium Public schools, owned and managed privately, have grown phenomenally, since the elite sections of society felt that English was required to get an access to high profile jobs, so they had enormous demand for learning-teaching in English. This not only torpedoed the Kothari Commission's recommendation for neighborhood schools but also led to proliferation of English medium schools into semi-urban and rural areas also due to demonstration effect.

With the entry of private enterprise and capital during the seventies and eighties, specially in secondary, senior secondary, professional and technical education along with teacher education, institutions for these levels and type of education have grown phenomenally. So public-private partnership in education, including teacher education, has to be recognized as the need of the hour. But it first appeared, as NGOs being partners in development, including development of education. But PPP has gone beyond NGOs to enlist corporate and individuals investors in education as partners in the development of education. Legal obligation for corporate for discharging 'Social Responsibility' has also stimulated the entry of private enterprise and capital in education, including teacher education. The phrase public-private partnership, in fact, has been coined recently to emphasize the role of private capital, initiatives and enterprise in the socio-economic development of the country. Education and health have been the prime targets for PPP.

The discussion so far makes it clear that neither planning for controlled and regulated development alone nor the free forces of the market alone could be relied upon to guide the social, economic and educational system, including teacher education, along its equilibrium growth path. This needs public-private partnership under public guidance and regulation so as to make the system move along desired directions without leaving the market forces to turn into unwanted channels.

4. Balanced Growth of Teacher Education

A critical feature of growth of education in India has been its 'Cobweb' like movements, associated with the short supply of manpower in one period, which is subsequently followed by excess supply of manpower in general, and professional and technical education in particular in the other period. Shortages are made up by down-grading of qualifications while excess supply is adjusted by upgradation of qualifications (Sharma, 2007). The surpluses of educated manpower in sixties and seventies had resulted in all-round upgradation of educational qualification for jobs across the board (Prakash, 1977). Despite down and upgradation of qualifications, end result is either persistence of shortage or unemployment of graduates with the given level and type of education. But the market forces never

complete the adjustment process successfully (Prakash, 1977). Both these facets involve either waste of precious resources, invested in the accumulation of human capital that is left un/under-utilized, while utilization of under-qualified personnel undermines productivity and growth. It highlights the need for accumulation of human capital of right kind in right numbers at right time. This holds for teacher education also. Therefore, it is essential to work out balanced growth of teacher education in future. For this, we have to consider the use of regulation and free market forces together in order to guide factors that affect demand and supply of teachers and teacher educators. This has acquired utmost urgency as elementary education is likely to be universalized by 2011. Then, universal secondary education will be the next target. Eleventh five year plan has already taken cognizance of this eventuality. An increasing fraction of basic education graduates will seek entrance into secondary and then senior secondary schools that will lead to highly bulging enrolments first in secondary and then in senior secondary education. Naturally, demand for places in secondary and senior schools, and hence, teachers is expected to grow exponentially. This has already been experienced in the past when rapid growth of enrolments in basic education has led to subsequent growth of enrolments in secondary education.

Demand for teacher educators depends upon the number of institutions of teacher education and enrolments of future teachers in these institutions. Number of institutions, in turn, depends upon funds available for investment, on the one hand, and the demand for teachers in schools, on the other. So, the demand for institutions for education and teacher educators has to be analysed for which we need the analysis of growth of demand for schools and teachers in future. Thus, the analysis of the growth of teacher education is extremely complex and complicated. This aspect has been dealt with in a separate paper and may be referred to.

The mapping of the historical evolution of Indian education system will furnish us the proper perspective to understand and appreciate these complexities properly. For analysing the role and status of PPP in teacher education, teacher education under Five Year Plans is briefly examined here.

5. Teacher Education under Five Year Plans

The twin factors, underlying the need for PPP, may be explained and illustrated adequately by the observations recorded in the first five year plan with respect to structural imbalances among different levels and types of education, insufficient development and regional concentration and the resultant inequalities: (i) Need for future reorganization, as delineated by 'pioneering work of private institutions' and 'committees and commissions'; (ii) large number of primary schools, expected to be opened, will raise the demand for teachers which, in turn, will raise the demand for secondary education, while expansion of secondary education will further raise the demand for teachers at the secondary stage; (iii) expansion in certain

fields has been without adequate provision of teachers, equipment, etc., unduly lowering standards, this deficiency will also generate demand for more teachers; and (iv) adoption of the basic pattern of education will also require more teachers.

Wastage due to stagnation and high drop-out rates was attributed largely to poor quality of teaching as well as faulty methods of education. Unplanned growth of institutions was also recognized as a form of wastage, since it leads to gap between demand and supply of teachers. The scales of pay and service conditions of teachers were almost pathetic, which was recognized as the major cause of low standards of teaching. In addition to the above, a very large proportion of teachers were untrained and even under-qualified. Fact is that out of 71 lakh total teachers in 1949-50, most of them were either untrained or required retraining. To be precise, 41.4 per cent of total teachers in primary schools were untrained, while secondary schools had 46.4 per cent untrained teachers.

Most of the trained teachers also required considerable retraining. Another problem was the scarcity of women teachers, who are considered more suitable for school education, specially balwadis, pre-schools, day nurseries and primary schools. Scarcity of women teachers is revealed by the fact that in 1953-54, only about 17 per cent of total primary and secondary teachers were women. The task of training women teachers has to be approached as a matter of urgency, especially because in the third five year plan, expansion of primary education was primarily focused on girls' education. The scarcity will be further accentuated by the creation of separate schools for girls. Expansion of teachers' training facilities was, therefore, accorded very high priority. It was estimated that investment of Rs. 200 crore was needed for teachers' training for basic and secondary schools. But total first plan investment was itself very modest, so total allocation to education was only Rs. 169 crore. Rs 200 crore for teachers' training was far beyond the plan resources. Total allocation to education rose to Rs. 307 crore. We have, however, not found any specific amount of plan allocation for teachers' education and training. It should have been either a part of higher or professional and technical education. It may probably be explained by the fact that teacher education is generally a part of colleges of general and professional education and university departments.

The second five year plan has mooted the levy of an educational cess revenue from which has to be spent on education by local authorities and communities to ensure PPP. This is obvious from the following passage from the plan: 'If the directive of the Constitution in favour of free and compulsory education up to the age of 14 years is to be fulfilled, Government's resources will have to be supplemented in increasing measure by local community effort... in India for centuries the tradition was that most of the expenditure on education was met by the community. In recent years also local communities have come forward to make generous contributions in land, labour and money for the provision of

school buildings. What is now required is, in addition, a contribution towards the cost of maintenance of schools, which will be steady and recurring, not merely sporadic or occasional. To enable local communities to shoulder in some measure the continuing responsibility which this implies, it is recommended that each State should...enable local authorities (including village Panchayats), to levy a cess for education...the responsibility and initiative of individual communities would be specially stressed and the people would know that whatever they contributed would be used for their benefit...' Number of teachers' Basic Training Schools rose from 114 in 1950-51 to 449 in 1953-54. It was targeted to reach 729 at the end of second five year plan. Training of basic education teachers was to ensure the observance of high standards of teaching. Seminars, refresher courses and in-service training were also organised. Postgraduate training colleges were affiliated to universities for enabling basic trained teachers to go up for higher professional training.

In 1955-56, only about 60 per cent of teachers of secondary schools were trained. It was expected to rise to 68 per cent by 1960-61. The plan provided to train 500 graduate and 1000 diploma teachers for multi-purpose and junior technical schools. States' Plans provided Rs. 46 crore for various programmes, including training of teachers.

Enormous expansion of education and immenseness of the task of training teachers may be gauged from the fact that total number of teachers rose from 7.3 lakh before first plan to 10.24 lakh in 1955-56; number was expected to further rise to 13.56 lakh in 1960-61. Second plan allocation was Rs.17 crore for expansion of existing teachers' training institutions and establishing 231 new training schools and 30 training colleges. Progress during the first and second five year plans in teachers' training may be gauged from Table 2:

On the eve of the fourth five year plan, rapid expansion of enrolments put severe strain on the physical facilities and teaching personnel of educational institutions even as the number of elementary school teachers rose from about 1.09 million in 1960-61 to about 1.60 million in 1968-69, with a corresponding expansion of facilities for teachers' training. Number of trained teachers in elementary schools during this period rose from about 0.71 million to about 1.24 million, and proportion of trained teachers rose from 65 to 77. But during 1966-69, there was considerable unemployment among the trained teachers in some States leading to closure of some training institutions in a few states, some states have raised the period of training to two years. At present, the problem of untrained teachers is confined largely to the north-eastern region states and union territories. The teachers' training needed special attention for improving quality of teacher education in general and the training of women teachers and tribal teachers, training of mathematics and science teachers for middle classes and in-service training in particular. Correspondence courses will be organized for working untrained teachers.

Number of secondary teachers in 1968-69 was 0.525 million, But

Table 2: Teacher Training Programmes during 1st & 5th Plans

	1950-51	1955-56	1960-61
Training Institutions:			
1) Training schools	782	930	1307
2) Training colleges	53	107	236
Teachers:			
i) Primary school teachers	5,37,918	6,91,249	9,10,000
ii) Trained teachers	3,16,124	4,23,192	5,91,500
iii) Percentage of trained teachers	58.8	61.2	65.0
Middle school:			
i) Teachers	85,496	1,48,394	2,30,000
ii) Trained teachers	45,569	86,810	1,49,500
iii) Percentage of trained teachers	53.3	58.5	65.0
High/Higher secondary school:			
i) Teachers	1,26,504	1,89,794	2,29,000
ii) Trained teachers	68,059	1,13,307	1,55,720
iii) Percentage of trained teachers	53.8	59.7	68.0

Source: Planning Commission

only 0.381 million or 73% of them were trained. The National Council of Educational Research and Training and the State Institutes of Education were to work out the programmes of qualitative improvement at the school stage. Strengthening of educational institutions for teachers received great deal of attention in the fifth five year plan. Enrolments in elementary education rose approximately seven-fold from 22.3 million to 151.45 million in 1950-51 to 1996-97. At the high/higher secondary stage, the enrolments increased from 1.5 million in 1950-51 to 24.27 million in 1996-97. Thus, enrolments in school education rose from 23.8 million in 1950-51 to 175.72 million in 1996-97. Thus, enrolments in the terminal year increased by 7.38 times the base year enrolments. Thus, there were 112.3 students per teacher.

On the eve of the sixth five year plan, there were over 6.5 lakh schools and colleges with an annual budget of a little more than Rs. 3000 crore which employed over 3 million teachers. The sixth plan recognized teachers' role in achieving universal elementary education and improving the quality of primary education, bringing in environment and health education and value orientation to be pivotal. This needed training of teachers. Therefore, in-service training of teachers was accorded high priority, since such responsibility could not have been entrusted only to

new entrants into the teaching profession. For imparting in service training to 2.5 million teachers, institutionalization of in-service education of teachers was difficult due to huge costs and lack of facilities for training. The training of teachers was to include, along with pedagogy, the use of mass media, science and technology, planning and curriculum design for local environment-based courses, mobilisation and use of community resources. Thus, the seventh plan, among other things, re-emphasized public private partnership for contributing resources for development of education. For the first time, teachers were entrusted the task of mobilising and utilizing community resources. PPP became all the more important because additional facilities were to be created for training more teachers. Infrastructure for training of teachers in non-formal and early childhood education was to be created and existing teacher training centres required suitable strengthening. Special attention was to be given to teaching methods and other measures required for first generation learners and for reducing drop-outs. Teacher training institutions were to be developed and strengthened accordingly.

The following training arrangements were made:

a) In-service education through mass media;
b) Adoption of schools of lower levels of education by institutions of higher levels for upgrading teacher competencies;
c) Provision of teacher guidance notes by training schools;
d) Publication of bulletins containing information about new developments; and
e) Use of correspondence course materials supported by occasional contact.

It may be noted that in 1987-88, a Centrally Sponsored Scheme (CSS) for restructuring and reorganisation of teacher education was started. It included : (i) Mass Orientation of School Teachers (MOST); (ii) strengthening of Secondary Teacher Education Institutions (STEIs); (iii) State Councils of Educational Research and Training (SCERT); (iv) setting up of District Institutes of Education and Training (DIETs); and (v) establishment and strengthening of Institutes of Advanced Studies in Education (IASE) in Universities. Between 1987-88 and 1991-92, about 12.96 lakh teachers were covered under the scheme of MOST and Central assistance was extended to set up 287 DIETs, 25 STEIs and 12 IASEs. The scheme of strengthening SCERTs could, however, not make much headway.

Efforts to increase people's participation in education', including teacher education, and 'to diversify educational programmes in order to promote knowledge and skills required for nation-building have characterised successive Five Year Plans. The pre-service and in-service training of teachers was to be reorganized during the ninth plan.

Progress of teacher education may be gauged from the fact that the

number of Teacher Training Schools increased from 782 in 1950-51 to 1234 and teacher training colleges increased from 53 to 697 in 1996-97.

The number of elementary and secondary school teachers increased six-fold from 7.5 lakh in 1951 to 45.28 lakh in 1996. Female teachers constituted 34.3 per cent of the total teachers in 1996. The budgeted expenditure on education increased from Rs. 644.6 crore in 1951-52 to Rs. 36,529.29 crore in 1996-97.

Private initiatives have made substantial contribution to the progress of education during the five year plans, including teacher education. During the Eighth Plan, a number of innovative projects like Lok Jumbish and Shiksha Karmi were implemented by non-governmental organisations, Government of India and the State Governments. The National Council for Teacher Education was also established during the Eighth Five Year Plan as a statutory body to promote planned and coordinated development of teacher education. The Council has developed norms and criteria on the basis of which applications for recognition of institutions of teacher education are processed. It has organized a number of programmes and brought out several publications dealing with different aspects of teacher education.

The decade of nineties could be considered to have been a watershed in the development of education in independent India. The Centrally Sponsored Scheme of re-organization of teacher education continued in the Eighth Plan. Under CSS, 425 DIETs were established, 108 training colleges upgraded and 5 university departments were given assistance. A special orientation programme covering 4.5 lakh primary teachers was organized for Operation Blackboard and introduction of MLL. A satellite-based interactive teacher orientation programme was implemented in Karnataka and Madhya Pradesh on an experimental basis. Table 3 depicts the programme for strengthening Teacher Education during the ninth plan period:

Table 3 : Strengthening Teacher Education – Physical Targets: IX Plan (1997-98 – 2001-2002)

Items	1997-1998	1998-1999	1999-2000	2000-2001	2000-2002	Total
(a) Upgradation of Colleges of Teacher Education (CTEs)/Institutes of Advance Studies in Education (IASEs) (Nos.)	5	5	5	5	5	25
(b) District Institutes of Education and Training (DIETs) (Nos.)	20	20	20	20	20	100

Thus, 25 colleges of teacher education were to be upgraded, while 100 additional DIETs were to be started in the plan period in order to take the responsibility for imparting training to would-be entrants as well as those already in service. The tenth plan aimed at consolidating the gains of ninth plan and move further on growth path.

Tenth Plan was an advancement over ninth plan so far as teacher education is concerned. The plan lent strength to the programmes of strengthening teacher education started in 1987. Restructuring and Re-organisation of teacher education was to be effected through strengthening the institutional base of teacher education. Special programmes in specific areas were designed for the purpose. In fact, schemes of teacher training were among the major thrusts of tenth five year plan. Setting up of 471 DIETs, 86 Colleges of Teacher Education, up-gradation of 38 Colleges of Teacher Education to Advanced Institutes of Education, and establishment of 19 more Advanced Institutes of Education were sanctioned under the scheme. Besides, Special Programme for School Teachers was also launched during the plan. The plan explicitly sought cooperation of non-government organizations and voluntary organizations of private sector in these gigantic tasks. It is, therefore, not surprising that one of the distinct achievements under tenth plan is that the share of private unaided higher education institutions, including teacher education institutions, increased from 42.6% in 2001 to 63.21% in 2006. The share of private institutions in total enrolments also increased from 32.89 % to 51.53 % in the same period. Thus, during a period of 5 years, growth of higher education has been much more rapid under private than public sector. This holds true for teacher education also. As the trend was expected to continue in the Eleventh Plan also, it was reasonable to expect that about half of the incremental enrolments targeted for higher and teacher education will come from private education providers.

Though emergence of private sector has helped expand capacity, it is characterized by some imbalances. Private institutions have improved access in a few selected disciplines such as engineering, management, medicine, IT, and teacher education etc., where students are willing to pay substantial fees, yet such institutions are accessible only to relatively prosperous segments of society. Besides, distribution of private institutions across the country is uneven; such states as Tamil Nadu, Karnataka, Andhra Pradesh, Gujarat and Maharashtra show very rapid growth of private institutions than the rest of the country. Besides, several private institutions prefer hiring visiting rather than permanent faculty of their own. This makes teacher student interaction outside the classroom extremely scanty. This compromises quality.

The Eleventh five year plan recognized the need for improvement in quality through raising expenditure on Teacher Education, Teaching Learning Equipment (TLE) (including Information and Communication Technology, ICT), Innovative Activities, School/Teacher Grants etc.. Outlay on these schemes needed to be sharply stepped up during the Plan.

Expenditure on these items had been low up to the tenth five year plan. The eleventh plan addresses such teacher related issues fully as the vacancies, absenteeism, non-teaching assignments to teachers in order to raise the quality through enhancing efficiency and productivity. Teachers were to become accountable for outcomes of learning by pupils. For this, it was essential that the targets of training of 100% teachers, including para teachers, improving PTR from 46:1 to 30:1, recruitment of additional teachers for single teacher schools and for schools having multi-grade teaching were realized. It was made mandatory to recruit two-third of new teachers to be female for primary classes. But the plan objectives have sought private participation is such initiatives which are justified by the important role that private sector has been playing in education over the years. This is evident from the following : Out of total 7.67 lakh primary schools, 0.75 lakh schools were in private sector; out of 2.75 lakh upper primary/middle schools, 0.77 lakh schools belonged to private sector. Thus, out of 10.42 lakh elementary schools, 1.52 lakh schools were private. As against this, almost 60 per cent of total secondary schools were in private hands in 2004-05 (Source: Planning Commission; Eleventh Five Year Plan). Normally, owners of private institutions not only upgrade their institutions from lower to higher level but they also diversify streams of education in existing ones. Besides, they establish multiple institutions and their branches. Most of the institutions of teacher education are a part of either colleges of general or professional and technical education. Above picture should, therefore, also provide a shadow of institutions of teacher education under private managements.

6. Future Prospects of PPP in Teacher Education

If things go as planned, it is hoped school education shall cover total population of both 6-14 and 15-18 year age groups by 2017. This will represent exponential growth of enrolments, which will necessitate proportionate growth in schools to avoid overcrowding. This, in turn, will make demand for teachers and teacher educators also to grow at rates commensurate with the growth of schools and enrolments. Both central and state governments may find their resource base inadequate to cope with the phenomenon, if PPP has to expand both horizontally and vertically in order to prevent the dilution of teaching-learning.

Number of elementary school teachers increased from 45.28 lakh in 1996 to 48.03 lakh in 2006, which is expected to go up 54.77 lakh in 2017. If we add secondary and senior secondary teachers to the list and if the target of PPR falling to 30 is also achieved, the number of total school teachers in 2017 will rise many times more.

Total requirement of additional teachers may easily be worked out from the following:

TATR = CT-R + GE

where TATR denotes total additional teachers required, CT shows number of teachers in position, R stands for number of teachers going out of system due to attrition, and GE represents growth of enrolments. Attrition is accounted by such factors as retirement, death and shifting from teaching to other occupations. It may be noted that several teachers are promoted to the ranks of administrators each year. Besides, a definite proportion move away from education altogether.

The above data have also been used as the base to derive estimate of regression growth rates from the following equation:

$$\log Y(i) = a + b X$$

where Y(i) denotes dependent variable the growth of which is to be estimated, i= 1,2,3. Enrolments, number of elementary teachers and institutions of teacher education are denoted by 1,2, and 3 respectively, X stands for time, 1,2,....11 and a and b are parameters to be estimated by ordinary least squares. Differentiation of Y with respect to X will show that b represents annual compound rate of growth of Y. Estimated equations are reported below:

$$\log Y (1) = 3.2891^* + 0.0052^* X, R2=0.9999^*$$

$$\log Y(2) = 1.6764^* +0.00512^*X, R2= 0.9999^*$$

$$\log Y (3) = 4.8982^* +0.0052^* X, R2=0.9999^*$$

Equations show that enrolments, teachers and institutions of teacher education grow significantly at the same annual compound rate of 0.52 per cent. All the three parameters are significant statistically at .01 probability level.

It may thus be concluded that the need for public private partnership will be needed even more in future than in the past.

Editors' Note

The preceding sections provide a generic conceptual analysis of PPP model in the field of education and can act as a background for evaluation of practical strategies of PPP in teacher education. The Editorial Committee has outlined contours of a possible framework in this direction.

In summary, the contours of PPP in education would address to delineate: (i) the role of private sector in the development of education in general and teacher education in particular; (ii) current status of PPP in teacher education including its strengths and weaknesses; and (iii) future possibilities and potential of PPP in teacher education, the open and global Indian economy may necessitate.

For undertaking such a multi-dimensional objective of developing PPP that targets the overarching developmental trajectory of the national human resource, there is a need for coalescing of meaningful efforts of

different players in education and related sectors to leverage on their combined strength. This may be possible through strong and robust PPP models, a deliberate initiative to leverage non-public (private sector) ideas, resources and efforts in addressing public development issues. While the Government would be the main service provider for the social sector, the private sector could come to provide valuable support through contribution of skills and services. The private sector could bring about creation and nurturance of:

- Innovative approaches
- Project management systems
- Professional performance measurement indicators
- Technical expertise in different areas

Within a perfect participative PPP framework, credible and large players, working in education and related sectors, would need to synergize their efforts with the Central and State Governments for taking up large sectoral programmes and use their experience of programmatic and implementation capabilities of large scale programmes with the Government. In order that each teacher education institution emerges as a quality institution in itself, there would be a need for larger financial allocations to ensure quality delivery of services. As a long term measure, it will require putting into place effective management structures for the newly created PPP initiative. In this case, therefore, the private sector would be invited to become a partner which could include commitment of funds to the newly created joint body for the management of PPP, besides programmatic collaboration to ensure quality in the envisioned teacher education institutions. This kind of a long term partnership would make the burden on the government, light and easy to meet.

The advantages of such a PPP model will be:

- Minimal budgetary outlay up-front by the Government
- Government obligations will only commence after the institutions are established and are up and running to Government satisfaction
- Higher levels of accountability will be possible as contractual agreements with the private sector can be enforced
- Time-bound implementation of the programmes will be facilitated
- Standards of construction and design parameters could be pre-specified
- Innovative and professional approaches to quality education with uniformity and standardization of quality across locations of the institutional infrastructure.

The ideas outlined herein would need to be translated into action in concrete and contextually relevant situations.

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Chapter 18

Growth of School Education: Implications for Teacher Education Policies

V.P. GARG

1. Background

Since independence, India has gone through a continous discourse on the entire spectrum of school education. The Secondary Education Commission (1952-53); Education Commission (1964-66) dealing with all sectors of education; National Policy Resolution on Education (1968); Challenge of Education – A Policy Perspective (1985); and National Policy on Education (1986) have been landmark documents in the history of Indian education. Making education a concurrent subject vide a Constitutional amendment in 1976 gave a new direction to the Centre-State concerns in education.

Education is a major instrument of social change, micro-planning and initiatives by the central government to support the state governments through higher allocation of funds for school education by launching Centrally Sponsored Schemes on education (CSS) provided a sound backdrop towards the development of education in India. Besides, various committees constituted to understand various sub-sectors and concerns of education have further provided technical inputs and recommendations towards improving the status of educational interventions. It is needless to say that the Planning Commission perspectives implemented by the Ministry of Human Resource Development (since 1985) have been instrumental to give some shape to the system and make education more relevant, functional and close to life-needs and aspirations of the people.

2. Restructuring of School Education Pattern and its Impact on Teacher Education

The Education Commission (1964-66) recommended 10+2+3 pattern

of school education which implies ten year of secondary education, two years of senior secondary education and first graduate degree of 3 years. The suggested pattern of 10+2+3 made one year additional for obtaining a senior secondary school certificate, a departure from the earlier 11 years of higher secondary school certificate based upon the Mudaliar Commission (1952-53). However, the change over by the States/ UTs for the new educational pattern of 10+2+3 has been gradual and in some states, even lower primary and upper primary classes still continue to be of seven years. Class VIII in States/UTs like Andhra Pradesh, Assam, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Karnataka, Kerala, Lakshdweep, Maharashtra, Meghalaya, Mizoram, Orissa is part of secondary education. Even at the primary level, Class V in States/UTs like Assam, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Kerala, Lakshdweep, Maharashtra, Meghalaya, Mizoram, Nagaland and West Bengal is part of upper primary stage (NCERT, 2007, Annexure I). These deviations have five distinct implications:

- Firstly, for universalisation of elementary education, funding as well as provisioning of physical infrastructure, teachers' deployment and training programmes provide constraints in logistics.
- Secondly, from teacher education point of view, teachers teaching classes VIII in secondary schools and teachers teaching in upper primary schools have to confront a different type of 'organizational school climate' as well as pedagogical approach.
- Thirdly, according to the National Council for Teacher Education (NCTE) norms, two-year diploma course in elementary education entitles the holder of this diploma to teach up to VIII standard. But in upper primary schools, generally, teachers holding a B.Ed. degree, with graduate qualification, are posted.
- Fourthly, this dichotomy in the educational pattern has led to pedagogical deviations. In-service teacher training programmes for teachers teaching in Class VIII in secondary schools may be deprived of this opportunity under the Sarva Shiksha Abhiyan (SSA).
- Fifthly, in some states, classes XI and XII are not part of a regular school system like other states. Either these classes are known as pre-university classes attached to degree colleges or running as junior colleges without a pre-requisite professional degree of teacher education.

3. Institutional Growth of Schools

After independence, there has been a significant expansion of schools, particularly middle and high schools. While reviewing the progress of the first two plans, the third plan document underlined the importance of reorganization of secondary education based on the recommendations of the Secondary Education Commission (1952-53). The Third Plan document observed:

"Reorganization of secondary education has mainly taken the form of conversion of high schools into higher secondary schools, establishment of multipurpose schools providing for a variety of courses and expansion of teaching facilities for both general science and science as an elective subject. The All India Educational Survey, which was undertaken during 1957-59, revealed important gaps in the distribution of educational institutions. Thus, for the country as a whole, in 1957 about 29% of rural habitations and about 17% of the rural population were not served by any school. In some states, these proportions were very much higher. Progress in establishing new schools during the first two Plans was relatively greater in respect of middle and high schools than in the case of primary schools".

The process of restructuring of secondary schools continued following the recommendations of the Secondary Education Commission (1952-53) which *inter-alia* resulted in the following:

- enlarging the content of secondary education to make it a self-contained unit within the educational process.
- conversion of high schools into higher secondary schools.
- development of multipurpose schools with provision of a number of elective subjects along with and in addition to the academic courses.
- expansion and improvement of facilities for the teaching of science, provision of educational and vocational guidance.
- improvement of the examination and evaluation system.
- enlargement of facilities for vocational education.
- increased facilities for the education of girls and backward classes.
- encouragement to merit through scholarship.

Teaching of 'modern mathematics' was made part of new curriculum at all stages of school education after the recommendation of the Education Commission (1964-66). Teaching of three languages at the school stage was also being implemented as a follow up of the recommendation of the Commission.

Primary Schools

During the first two five year plans, there had been slow progress of primary schools as compared to middle and secondary schools. In 1950-51, there were about 2.10 lakh primary schools whose number increased to 3.30 lakh in 1960-61. But, later on, the progress of primary schools picked up particularly after the recommendation of the Education Commission (1964-66). By 1986-87, the number of primary schools was 5.37 lakhs. In 2005-06, their number went up to 7.73 lakhs. It was expected that by 2011-12, their number would go up to 9.01 lakhs. This was necessary to achieve the universalization of elementary education so that

schooling facilities should be made available on 100% basis to children age cohort 6-11 by 2011-12.

Upper Primary Schools

In 1950-51, there were about 14,000 upper primary schools, their number in 1986-87 increased to 1,37,000 and further to 2,88,000 in 2005-06. As per National Policy there should be one upper primary school after two primary schools. If we compare the ratio, we find that this ratio, though improved, yet fell short of envisaged national policy. In 1950-51, the ratio between primary and upper primary schools was 15.42:1 which declined to 3.92:1 in 1986-87 and declined further to 2.68:1 in 2005-06. It implies that to meet a ratio of 2:1 at All India Level, we have to expand further upper primary schools to meet the desired national norms (Table I).

Secondary Schools

The base of secondary schools in 1950-51 was very small, i.e., 7,288. However, the momentum of expansion of secondary schools after the recommendation of Secondary Education Commission (1952-53) picked up.

Senior Secondary Schools

The concept of senior secondary schools was an 'offshoot' of the Secondary Education Commission. The secondary schools were upgraded with one additional class of 11th and converted into senior secondary schools or multipurpose senior secondary schools with a provision of practical subjects like agriculture, technology, commerce, home science and fine arts along with academic course. This process of reform in secondary education continued till the new recommendation made by the Education Commission (1964-66) which further added one year more to 11th class under the new pattern of 10+2+3. However, the acceptance of 10+2+3 pattern by the states was gradual and even today, the process of reform and implementation of this pattern is going on in the school sector in states and UTs. Table 1 indicates the pattern of growth of the senior secondary schools also. It may be observed that in 1996-97, when a separate data of these institutions were made available, there were 25,045 senior secondary schools. Their number increased to 53,643 in 2005-06, almost double in 10 years.

It is important to note here that due to restructuring, the task of converting pre-university XI and XII classes into school system is unfinished. Some States/UTs like Andhra Pradesh, Assam, Bihar, Chandigarh, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Puducherry, Punjab and West Bengal still have pre-degree classes attached to degree colleges or junior colleges; hence, the institutional growth of these senior secondary schools, enrolment and

teachers should be viewed from this angle. It would imply that when, in future, these classes are brought into mainstream of school system, then their enrolment and teachers deployed for instruction would lead to expansion of school system. It is, therefore, necessary to see the development system from the typical nature of structure of school education prevailing in different states and UTs. Graphs 1 and 2 reflect the growth pattern of schools between 1950-51 and 2011-12.

Table 1: Institutional Growth of Schools (As on 30th September) (Nos.)

Year	Lower Primary	Upper Primary	Secondary	Senior Secondary
1950-51	209671	13596	7288	Combined Secondary and Senior Secondary Schools
1960-61	330399	49663	17257	
1970-71	408378	90621	35773	
1980-81	485538	116447	51594	
1986-87	537399	137196	68895	
1996-97	598354	176772	73127	25045
2001-02	664041	219626	91435	42057
2002-03	651382	245274	90760	46447
2003-04	712239	262286	99140	46822
2004-05	767520	274731	101777	50272
2005-06	772568	288493	106024	53643
2006-07	800005	287478	110963	59596
2007-08	829180	296835	115807	66218
2008-09	854741	300479	120477	73389
2009-10	876326	307575	125105	80988
2010-11	887649	315098	129710	88386
2011-12	900716	320709	134199	95757

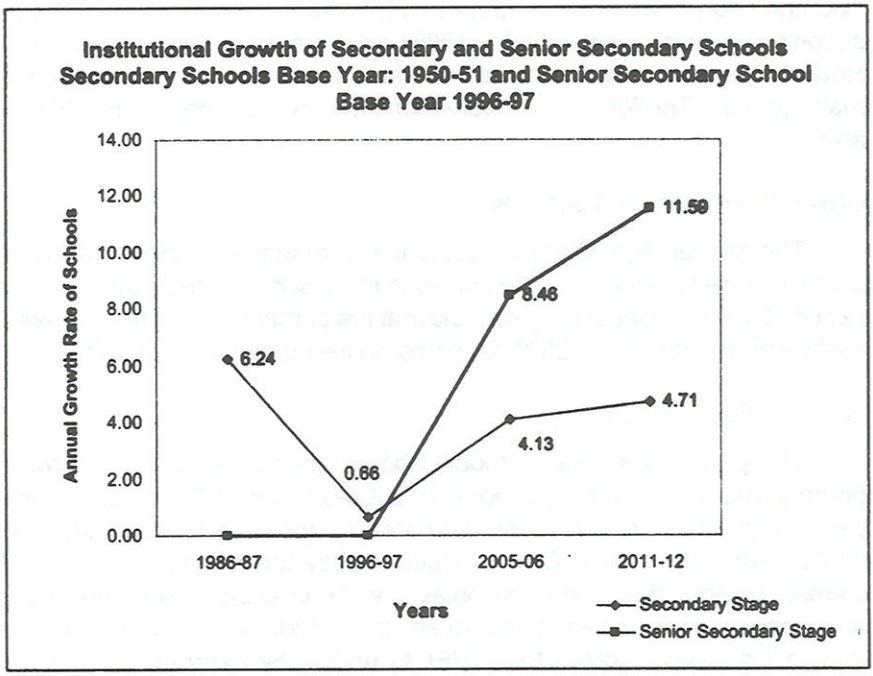
Source: As per Table 2

Note: For projecting schools for the years 2006-07 till 2011-12, the average enrolment for each category of schools (lower primary, upper primary, secondary and senior secondary prevailing in 2005-06 has been assumed for the next six years. The projected enrolment of 2006-07-2011-12 has been divided by the average enrolment value of 171 for lower primary, 181 for upper primary, 236 for secondary and 250 for senior secondary stage of school education.

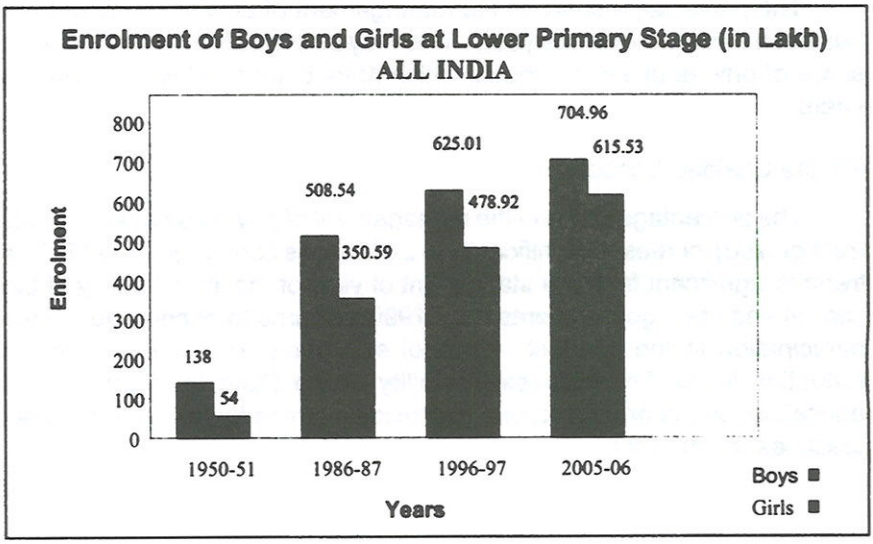
4. Observation on the Trend of Institutional Growth of Schools by Type of Management

Tables 2 and 3 provide the trends of schools by type of management. Table 2 is devoted to lower primary and upper primary stages and Table 3 to secondary and senior secondary stages. Type of management is classified broadly into: (i) Government managed schools; (ii) Local bodies schools; (iii) Government-aided schools; and (iv) Government recognized

Graph 1



Graph 2



unaided schools. The first time available data of school classification by management category is from Third All India Educational Survey (1973). The first two earlier surveys done in 1957 (as on March 31, 1957) and second survey (as on March 31, 1965) did not specify this classification. However, second survey provided enrolment and teachers by category of management. The following observations may be deduced from Tables 2 and 3.

Government Managed Schools

The percentage share of government managed schools in lower primary, upper primary and senior secondary schools declined over the period. It is only in secondary schools that the percentage share increased slightly more than 7% in 2005-06 as compared to its share in 1973.

Local Bodies' Schools

The percentage share of local bodies' schools increased in lower primary and upper primary schools in 2005-06 over 1973. However, the percentage share for secondary and senior secondary schools declined in 2005-06 over 1973. Due to decentralization of management of elementary education, the local bodies have been empowered to run lower and upper primary schools and even appoint school teachers through Village Education Committees (VECs) under the centrally sponsored scheme of Sarva Shiksha Abhiyan (SSA). However, the management of secondary and senior secondary schools is under the direct control of Directorates of School Education in the state and UTs.

Private Aided Schools

The percentage share in the management of private aided schools has been declining over the years. This may be attributed to the increased share of private unaided schools which have been established over the years.

Private Unaided Schools

The percentage share in the management of private unaided schools (recognized) increased significantly in 2005-06 as compared to 1973. This trend is significant from the stand point of view of the liberal policy of the central and state governments from 1990 onwards to encourage private participation in the conduct of school education. This has resulted in reduction in the financial responsibility of the State to impart school education, on the one hand, and to provide cushion for innovative school practices, on the other.

Table 2 : Institutional Growth of Schools by Type of Management and Area

(All India)	Year	Area	Lower Primary Schools (Classes I-V)					Upper Primary Schools (Classes: VI-VIII)				
			Govt.	Local Body	Private Aided	Private Unaided	Total	Govt.	Local Body	Private Aided	Private Unaided	Total
1	2		3	4	5	6	7	8	9	10	11	12
1	Third Survey (1973)	Rural	215305	179452	15541	3853	414151	39412	21105	12241	2970	75728
		Urban	16551	14104	7303	3620	41578	6576	3253	3855	1269	14953
		Total	231856	193556	22844	7473	455729	45988	24358	16096	4239	90681
		% to the total	50.88	42.47	5.01	1.64	100.00	50.71	26.86	17.75	4.67	100.00
2	Fourth Survey (1978)	Rural	172861	243842	11280	3619	431602	39137	37344	14625	3074	94180
		Urban	12039	17354	9702	3939	43034	6169	5514	4372	2169	18224
		Total	184900	261196	20982	7558	474636	45306	42858	18997	5243	112404
		% to the total	38.96	55.03	4.42	1.59	100.00	40.31	38.13	16.90	4.66	100.00
3	Fifth Survey (1986)	Rural	203656	255331	12038	4798	475823	51561	38560	17361	5605	113087
		Urban	15101	18101	10911	8794	52907	7926	6386	5297	6320	25929
		Total	218757	273432	22949	13592	528730	59487	44946	22658	11925	139016
		% to the total	41.37	51.71	4.34	2.57	100.00	42.79	32.33	16.30	8.58	100.00

(Cont'd...)

4	Sixth Survey (1993)	Rural	235958	247974	14478	9171	507581	85104	52472	21856	9341	168773
		Urban	18648	22832	7079	14315	62874	15806	9345	14957	15664	55772
		Total	254606	270806	21557	23486	570455	100910	61817	36813	25005	224545
		% to the total	**44.63**	**47.47**	**3.78**	**4.12**	**100.00**	**44.94**	**27.53**	**16.39**	**11.14**	**100.00**
5	Seventh Survey (2002)	Rural	337249	194504	15642	25419	572814	57806	54099	5633	16384	133922
		Urban	25822	20213	7967	24248	78250	7729	7387	5460	20377	40953
		Total	363071	214717	23609	49667	651064	65535	61486	11093	36761	174875
		% to the total	**55.77**	**32.98**	**3.63**	**7.63**	**100.00**	**37.48**	**35.16**	**6.34**	**21.02**	**100.00**
6	2005-06	Total	329147	359320	23907	60194	772568	124556	83100	17709	63128	288493
		% to the total	**42.60**	**46.52**	**3.09**	**7.79**	**100.00**	**43.17**	**28.80**	**6.14**	**21.88**	**100.00**

Source: All India Educational Surveys, NCERT, New Delhi
Selected Educational Statistics (Provisional) MHRD, GoI, www.education.nic.in 2005-06

Table 3 : Institutional Growth of Schools by Type of Management and Area (All India)

S.No	Year	Area	Secondary Schools (Classes IX-X)					Senior Secondary Schools (Classes: XI-XII)				
			Govt.	Local Body	Private Aided	Private Unaided	Total	Govt.	Local Body	Private Aided	Private Unaided	Total
1	2		3	4	5	6	7	8	9	10	11	12
1	Third Survey (1973)	Rural	5925	3283	12508	1184	22900	1428	116	2432	121	4097
		Urban	2042	975	6439	760	10216	1810	209	3084	305	5408
		Total	7967	4258	18947	1944	33116	3238	325	5516	426	9505
		% to the total	24.06	12.86	57.21	5.87	100.00	34.07	3.42	58.03	4.48	100.00
2	Fourth Survey (1978)	Rural	7971	3061	14845	629	26506	1827	45	2657	56	4585
		Urban	2353	750	6338	728	10169	2187	247	3151	259	5844
		Total	10324	3811	21183	1357	36675	4014	292	5808	315	10429
		% to the total	28.15	10.39	57.76	3.70	100.00	38.49	2.80	55.69	3.02	100.00
3	Fifth Survey (1986)	Rural	15999	3953	15582	3328	38862	3081	76	3746	233	7136
		Urban	3386	967	6844	2501	13698	3037	260	4296	736	8329
		Total	19385	4920	22426	5829	52560	6118	336	8042	969	15465
		% to the total	36.88	9.36	42.67	11.09	100.00	39.56	2.17	52.00	6.27	100.00

(Cont'd...)

4	Sixth Survey (1993)	Rural	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Urban	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Total	24559	7401	23060	10544	65564	8624	820	10150	2080	21674
		% to the total	**37.46**	**11.29**	**35.17**	**16.08**	**100.00**	**39.79**	**3.78**	**46.83**	**9.60**	**100.00**
5	Seventh Survey (2002)	Rural	3024	243	544	3278	7089	752	51	340	1069	2212
		Urban	687	197	820	6752	8456	1056	147	1135	4387	6725
		Total	3711	440	1364	10030	15545	1808	198	1475	5456	8937
		% to the total	**23.87**	**2.83**	**8.77**	**64.52**	**100.00**	**20.23**	**2.22**	**16.50**	**61.05**	**100.00**
6	2005-06	Total	33548	9767	29587	33122	106024	17897	602	16504	18640	53643
		% to the total	**31.64**	**9.21**	**27.91**	**31.24**	**100.00**	**33.36**	**1.12**	**30.77**	**34.75**	**100.00**

Source: All India Educational Surveys, NCERT, New Delhi
Selected Educational Statistics (Provisional) MHRD, GoI, www.education.nic.in 2005-06

NA Not Available

5. Enrolment Trends

Under this section, analysis has been made of enrolment trends with respect to the following components:

(1) Growth trends of enrolment by stages of school education starting from the years 1950-51 till 2005-06.
(2) Enrolments trends by type of management.
(3) Equity aspect with respect to participation rate of students belonging to scheduled castes, scheduled tribes and girls.
(4) Projected enrolment by stages of school education for the years 2006-07 till 2011-12.

Growth Trends of Enrolment by Stages of School Education

Between 1950-51 and 1986-87, the growth trends in enrolment could be analyzed on a low base of the year 1950-51 which was the starting period of the first five year plan. As already indicated that the growth of primary schools as well as enrolment picked up after third plan onwards but the boost it received was only when the New Policy on Education (1986-87) made a clear-cut case of universalization of elementary education as a national priority. The Jomtein Conference (1990) provided a base of political will to the country for achieving this goal in a time-bound manner.

Lower Primary Stage

It may be observed from Table 4 that enrolment at the primary stage increased from a level of 192 lakh in 1950-51 to 859.13 lakh in 1986-87 and further to a level of 1320.49 lakh in 2005-06 with annual growth rate of 3.40%. The enrolment of boys registered a growth rate of 2.65% annually and of girls 4.46% covering period of 1950-51 and 2005-06.

Upper Primary Stage

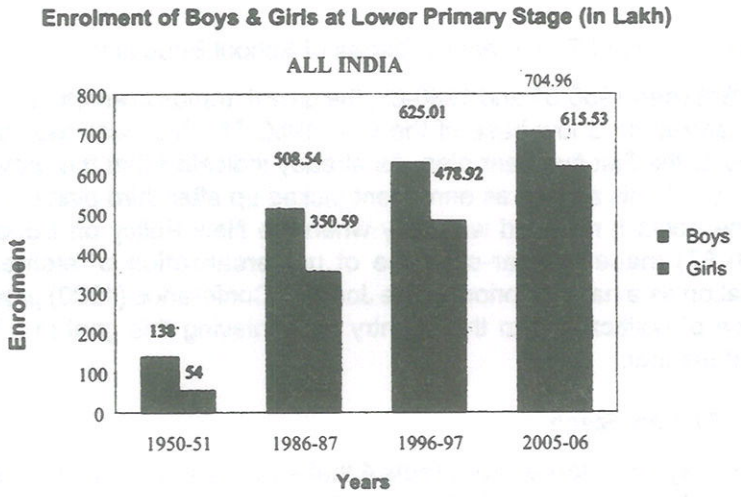
Enrolment at the upper primary stage increased from a level of 31 lakh in 1950-51 to 272.72 lakh in 1986-87 and further to 521.95 lakh in 2005-06. The enrolment of boys increased with an annual growth rate of 3.59%, of girls 6.22%, with an overall annual growth rate of 4.52%.

Secondary and Senior Secondary Stages

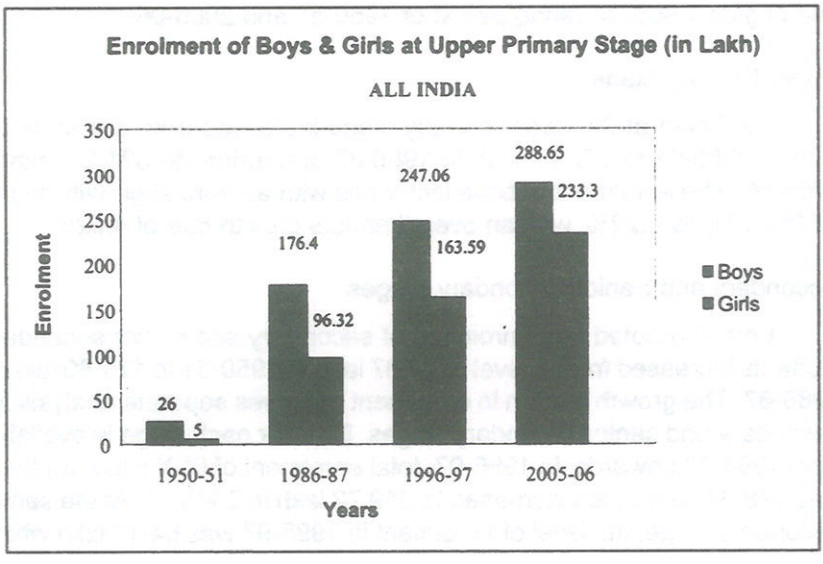
It may be noted that enrolment of secondary and senior secondary students increased from a level of 14.87 lakh in 1950-51 to 171.80 lakh in 1986-87. The growth pattern in enrolment deserves separate analysis for secondary and senior secondary stages. Data for each stage is available from 1996-97 onwards. In 1996-97, total enrolment of IX-X class students was 178.61 lakh which increased to 249.72 lakh in 2005-06. At the senior secondary stage, the level of enrolment in 1996-97 was 64.13 lakh which

increased to 134.15 lakh in 2005-06 registering an annual growth rate of 6.99%. Annual growth rate of girls was higher than that of the boys, i.e. 8.40 % compared to 6.07% between 1996-97 and 2005-06. Similarly, for secondary stage, the overall growth rate was registered 4.88% between 1996-97 and 2005-06, of which boys registered an annual growth rate 3.86% and girls 6.39%. Growth trends in enrolment for each stage of school education for the period, 1950-51, 1986-87, 1996-97, 2005-06 and 2011-12 are reflected in bar diagrams under Graphs 3, 4 and 5.

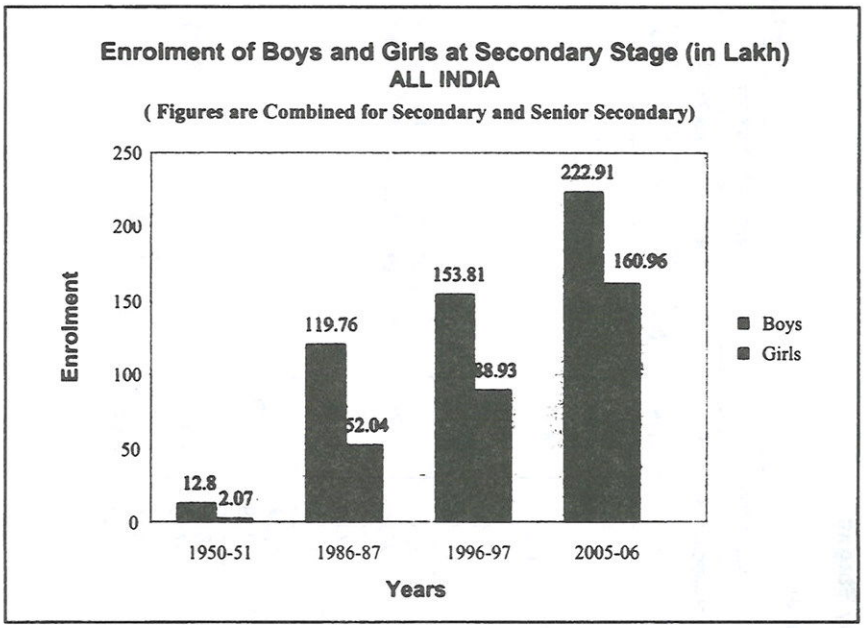
Graph 3



Graph 4



Graph 5



Enrolment by Management

It is also noteworthy to analyze the enrolment trend by type of management for different stages of school education. Table 5 indicates this trend for two points of time i.e. (as on 31st March, 1965) and (as on 30th September, 2002) derived from the Second All India Educational Survey and the Seventh All India Educational Survey respectively. Some of the observations on this trend by management are as under.

Government Managed Schools

In 1965, at the primary stage, the share of the government schools was 18.52%, at the upper primary stage 21.68%, and at secondary and senior secondary (combined) 18.77%. In 2002, the share of the government managed primary schools went up to 53.5%, of the upper primary schools to 42.32%, of the secondary stage to 29.14% and of the senior secondary to 30.19%.

Local Bodies' Managed Schools

In 1965, at the primary stage, the share of the local bodies' managed schools was 62.46%, upper primary stage 29.64%, secondary and senior secondary (combined) 12.79%. In 2002, the share of the primary schools got reduced to 30.69%, upper primary level to 28.08% secondary, while senior secondary stage appreciated to 15.35% (considered combined).

Table 4 : Enrolment by Stages

(As on 30th September)

(In Lakhs)

Year	Lower Primary			Upper Primary			Secondary			Senior Secondary		
	Enrolment Class I-V			Enrolment Class VI-VIII			Enrolment Class IX-X			Enrolment Class XI-XII		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1950-51	138	54 (28.13)	192	26	5 (16.13)	31	12.80	2.07 (13.90)	14.87	Combined Secondary and Senior Secondary Schools		
1960-61	236	114 (32.57)	350	51	16 (23.88)	67	27.77	6.86 (19.80)	34.63			
1970-71	357	213 (37.37)	570	94	39 (29.32)	133	53.04	18.63 (26.00)	71.67			
1980-81	446*	281* (38.65)	727*	133*	66* (33.17)	199*	87.12	37.80 (30.26)	124.9			
1986-87	508.54	350.59 (40.81)	859.13	176.40	96.32 (35.32)	272.7	119.76	52.04 (30.29)	171.80			
1996-97	625.01	478.92 (43.38)	1103.93	247.06	163.59 (39.84)	410.7	112.34	66.27 (37.10)	178.6	41.47	22.66 (35.33)	64.13
2001-02	636.19	502.64 (44.14)	1138.83	260.89	187.39 (41.80)	448.3	121.48	79.06 (39.43)	200.5	62.96	41.57 (39.77)	104.5

(Cont'd...)

2002-03	650.84	573.13 (46.83)	1223.97	262.65	205.80 (43.93)	468.5	127.64	90.32 (41.44)	218	67.32	46.86 (41.04)	114.2
2003-04	683.60	599.06 (46.70)	1282.66	272.86	214.61 (44.03)	487.5	136.91	95.85 (41.18)	232.8	69.21	48.12 (41.01)	117.3
2004-05	696.75	610.89 (46.72)	1307.64	285.04	227.42 (44.38)	512.5	142.22	101.08 (41.55)	243.30	74.65	52.80 (41.43)	127.5
2005-06	704.96	615.53 (46.61)	1320.49	288.65	233.3 (44.70)	521.95	144.74	104.98 (42.04)	249.7	78.17	55.98 (41.73)	134.2
2006-07	728.13	639.25 (46.75)	1367.38	284.15	235.97 (45.37)	520.12	150.98	110.37 (42.23)	261.35	86.79	62.25 (41.77)	149.04
2007-08	755.84	661.41 (46.35)	1417.25	289.84	247.20 (46.03)	537.04	156.94	115.82 (42.46)	272.76	96.37	69.23 (41.81)	165.60
2008-09	783.77	677.17 (46.35)	1460.94	292.09	251.55 (46.27)	543.64	162.59	121.17 (42.70)	283.76	106.69	76.85 (41.87)	183.54
2009-10	808.26	689.57 (46.04)	1497.83	296.7	259.78 (46.68)	556.48	168.19	126.47 (42.92)	294.66	117.72	84.82 (41.88)	202.54
2010-11	822.97	694.22 (45.76)	1517.19	300.34	269.75 (47.32)	570.09	173.64	131.86 (43.16)	305.50	128.42	92.62 (41.90)	221.04
2011-12	840.34	699.18 (45.42)	1539.52	302.63	277.61 (47.84)	580.24	179.00	137.08 (43.37)	316.08	138.90	100.58 (42.00)	239.48

(Cont'd...)

Source: A Handbook of Educational and Allied Statistics 1980-1983. Selected Educational Statistics, 1980-81, 1986-87 (Provisional), Ministry of Education & Culture now known as Ministry of Human Resource Development: GoI, New Delhi.

1. Education in India since Independence. A Statistical Review, Ministry of Education and Social Welfare, New Delhi, 1972, Studies in Educaitonal Statistics No. 8, 1972, p.11-12
2. Selected Educational Statistics, Ministry of Education & Culture, New Delhi, 1983
3. Selected Educational Statistics, Minsitry of Human Resource Development, New Delhi, 1988 (1986-87), pp.28-33
4. Selected Educational Statistics, Minsitry of Human Resource Development, New Delhi, 1996-97, 2001-02. (www.education.nic.in 2005.06)

Note: 1* Enrolment for Primary and Upper Primary Stage is of 1981-82.

Figures in brackets indicate the perentage of the total.

For 1980-81 and 1986-87 Statistics relate to Institutions of High Schools/ Higher Secondary Schools and Intermediate/Junior Colleges and Enrolment of Classes IX, X, XI, and XII only.

2. Enrolment for 2006-07 till 2011-12 has been projected based on the methodology as explained in the text.

Table 5 : Enrolment by Type of Management and Location at School Stage

S.No.	Stage of School Edu.	Area	Second Survey (31st March 1965)					Seventh Survey (30th September 2002)				
			Govt.	Local Body	Govt. Aided	Govt.Un-aided	Total	Govt.	Local Body	Govt. Aided	Govt.Un-aided	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Lower Primary (I-V)	Rural Urban Total	6985723 2077605 9043328	25479474 5024727 30504201	5507533 3047935 8555468	198845 532946 731591	38151375 10683213 48834588	39171410 4152590 43324000	20997920 3829901 24827821	2207581 2441766 4649347	3863858 4235627 8099485	66240769 14659884 80900653
% to the total			18.52	62.46	17.52	1.5	100	53.55	30.69	5.75	10.01	100
2	Upper Primary (VI-VIII)	Rural Urban Total	1255693 964890 2220583	2017116 1019506 3036622	2422459 2171626 4594085	211323 182008 393331	5906591 4338030 10244621	19691148 3259852 22951000	12203067 3027430 15230497	2991748 2831627 5823375	4370633 5859509 10230142	39256596 14978418 54235014
% to the total			21.68	29.64	44.84	3.84	100	42.32	28.08	10.74	18.86	100
3	Secondary (IX-X)	Rural Urban Total	325661 652393 978054	309336 357214 666550	1527636 1833035 3360671	51880 153109 204989	2214513 2995751 5210264	6905247 1908444 8813691	2715775 735746 3451521	6605386 3932296 10537682	2879784 4561883 7441667	93430192 11138369 30244561
% to the total			18.77	12.79	64.5	3.94	100	29.14	11.41	34.84	24.61	100
4	Senior secondary (XI-XII)	Rural Urban Total	Combined for Classes IX - onwards					5457611 5432468 10890079	492736 797456 1290192	7726852 8417385 16144037	2124005 5628521 7752526	15801004 20275830 36076834
% to the total								30.19	3.58	44.75	21.49	100

Source: Second All India Educational Survey NCERT (1967) pp 32, 48, 63
Seventh All India Educational Survey NCERT, pp 25-28

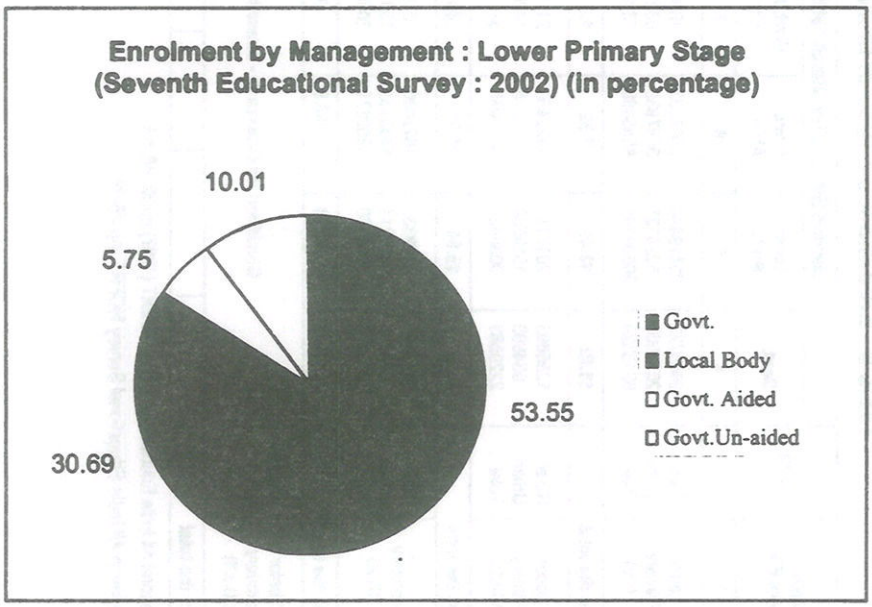
Government Aided Schools

In 1965, the share of government aided schools in the total enrolment at the lower primary stage was 17.52%, at the upper primary stage 44.84%, and at the secondary and senior secondary stage (combined) 64.50%. In 2002, the corresponding percentage share at the lower primary stage was 5.75%, at the upper primary level 10.74%, and at the secondary and senior secondary stages, was 34.84% and 44.75% respectively.

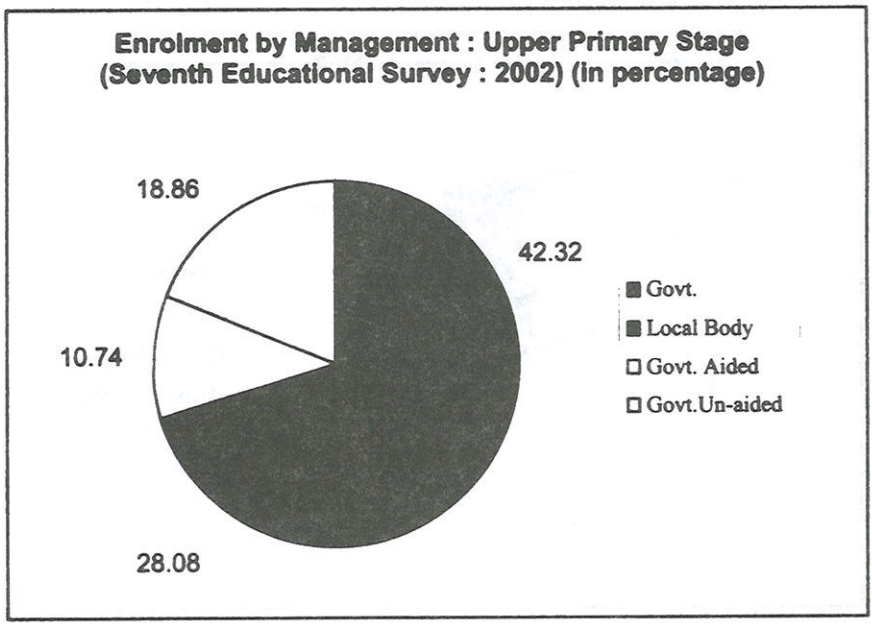
Government Unaided Schools

In 1965, the share of the primary schools in the total enrolment constituted only 1.50%, of the upper primary schools 3.84% and of the secondary and senior secondary schools 3.94%. In 2002, the overall share of this category of schools shot up significantly. The share of primary schools was 10.01%, of upper primary 18.86%, of secondary and senior secondary 24.61% and 21.49%% respectively. It implied that the share of unaided schools has been constantly rising over the period. Graphic presentation of enrolment trend in absolute terms by management category is reflected under Graphs 6, 7, 8 and 9.

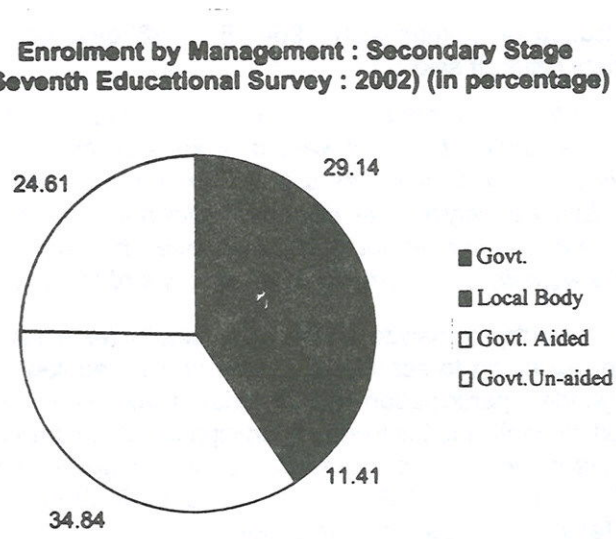
Graph 6



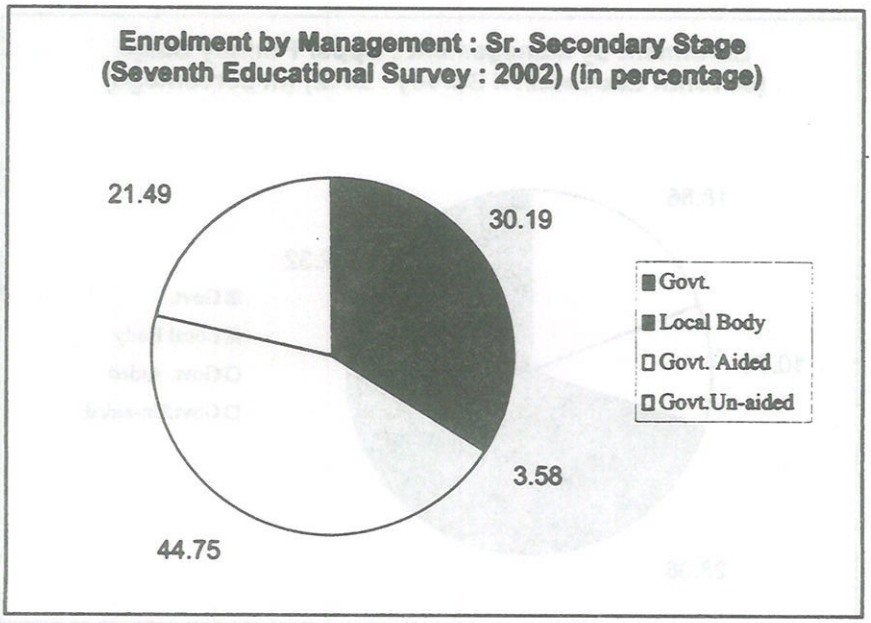
Graph 7



Graph 8



Graph 9



Source: Based on Table 5

6. Equity

The Education Commission (1964-66, p 198) devoted a full chapter on the equity issue. It said :

"One of the important social objectives of education is to equalize opportunity, enabling the backward or under-privileged classes and individuals to use education as a lever for the improvement of their education. Every society that values social justice and is anxious to improve the lot of the common man and cultivate all available talent must ensure progressive equality of opportunity to all sections of the population".

It is noteworthy to analyze to what extent equity, (extent of participation of children belonging to scheduled castes and scheduled tribes and in terms of gender (participation rate of girls) is achieved. This could be understood by analyzing the trend of participation of children belonging to SCs and STs in the school system. Table 6 reflects this trend covering the years 1973, 1978, 1986, 1993, 2002 and 2005-06. Some observations from this Table can be deduced as under :

Children of Scheduled Castes

It is noteworthy that the participation of scheduled caste children at all stages of school education has improved over the year. In 1973, their

share in the total enrolment at the lower primary stage was 13.19%, at the upper primary stage level, 8.47%, at the secondary and senior secondary stage (combined) 8.02% which improved to 19.17% at the lower primary stage, 17.52% at the upper primary stage, 15.07%, at the secondary stage in 2005-06. It may be further noted that the girls share under this category also improved further.

Children of Scheduled Tribes

In 1973, the share of children of scheduled tribes in the total enrolment at the lower primary stage was only 5.82%, at the upper primary stage only 2.85%, at the secondary and senior secondary stage (combined) 2.51% only. In 2005-06, the corresponding percentage went up to 10.69%, and 8.56% at the lower and upper primary level. At the secondary stage (classes IX-X), in 2005.06, the participation rate was 6.24% and at the senior secondary stage 4.81%. It is further encouraging to note that the participation rate of girls at all stages of school education improved a lot. However, the participation rate both of SC and ST needed further improvement. Graphic presentation of enrolment share of SC, ST and other communities is reflected for the year 2002 in Graphs 10, 11, 12 and 13.

Participation Rate of Girls

Enrolment trends for general category of students including girls were analyzed in Table 4 for the years 1950-51 till 2005-06 and further projected for the years till 2011-12. It was noteworthy that participation rate of girls improved at the lower primary stage from 28.13% in 1950-51 to 46.61% in 2005-06. Similarly, at the upper primary stage the participation rate of girls was 16.13% in 1950-51 which improved to 44.70% in 2005-06. At the secondary and senior secondary stages the participation rate of girls was 13.90% which improved 30.29% in 1986-87. The break-up of participation rate of girls for secondary and senior secondary stages separately were available from 1996-97 onwards. In 1996-97, the participation rate of girls at the secondary stage was 37.10% and for senior secondary stage 35.33% which improved to 42.04% in 2005-06 for secondary stage and 41.73% for senior secondary stage. Even after this improvement of girls participation rate, there existed a gender gap in enrolment which needed correction by taking necessary measures by central and state government in the next Five Year Plan.

Table 6 : Trends in Enrolment : All Communities, SC, ST at School Stage

Sl. No.	Year		Classes I-V			Classes VI-VIII			Classes IX-X			Classes XI-XII		
			Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Third Survey (1973)	A	38145765	23109485	61255250	9637146	4550602	14387748	5622981	2068280	7691241	Combined for IX onwards		
		B	5391961	2685519	8077480	923623	295105	1218728	500746	115963	616709			
		C	2422799	1142011	3564810	294733	114904	409637	145522	47406	192928			
	B as % to A		14.14	11.62	13.19	9.39	6.48	8.47	8.91	5.61	8.02			
	C as % to A		6.35	4.94	5.82	3.00	2.53	2.85	2.59	2.29	2.51			
2	Fourth Survey (1978)	A	42350994	26251230	68602224	12086269	5872208	17958477	4935921	2082301	7018222	1378772	454801	1833573
		B	6634193	3194435	9828628	1492745	519667	2012412	537495	159778	697273	142882	26953	169835
		C	1868595	1434618	3303213	444844	164310	609154	148262	62296	210558	25725	7261	32986
	B as % to A		15.66	12.17	14.33	12.35	8.85	11.21	10.89	7.67	9.94	10.36	5.93	9.26
	C as % to A		4.41	5.46	4.82	3.68	2.80	3.39	3.00	2.99	3.00	1.87	1.60	1.80
3	Fifth Survey (1986)	A	50853971	35059507	85913478	17640356	9631980	27272336	7866884	3653112	11519996	2429508	1080063	3509571
		B	9035971	5668937	14704908	2759724	1247131	4006855	1109172	404399	1513571	299231	91841	391072
		C	4170946	2654176	6735122	976031	420913	1396944	362210	137312	499522	68794	27669	96463
	B as % to A		17.77	16.17	17.12	15.64	12.95	14.69	14.10	11.07	13.14	12.32	8.50	11.14
	C as % to A		8.20	7.57	7.84	5.53	4.37	5.12	4.60	3.76	4.34	2.83	2.56	2.75
4	Sixth Survey (1993)	A	55148049	41881186	97029235	20572208	13498650	34071058	9668910	5550482	16219392	3501794	1963360	5465154
		B	11104624	7930673	19035297	3379781	1922141	5301922	1413159	674510	2087669	460751	200246	1284290
		C	5157712	3651869	8809631	1280017	712857	1992874	542373	256440	798813	159751	60955	220706

(Cont'd...)

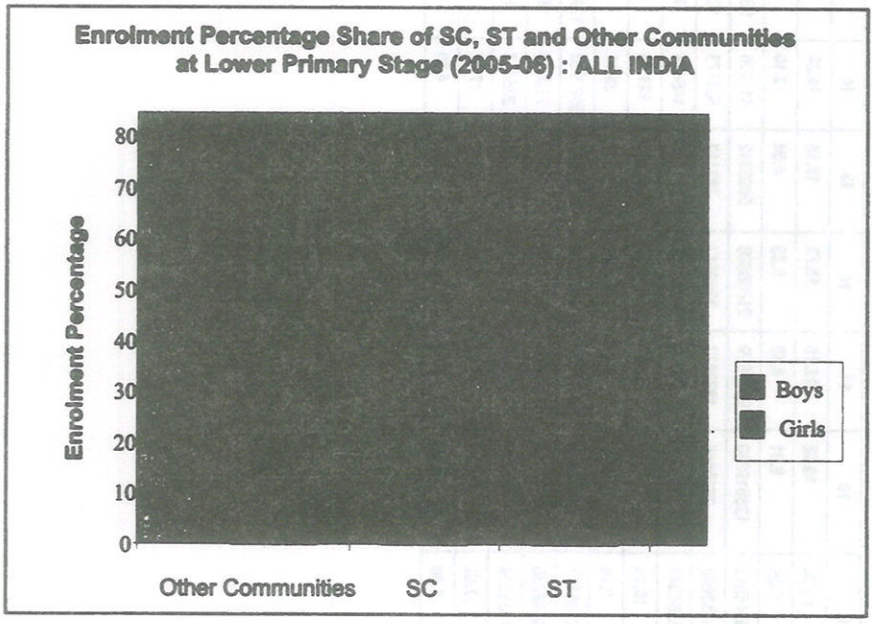
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	B as % to A		20.14	18.94	19.62	16.43	14.24	15.56	14.62	12.15	13.72	13.16	10.20	23.50	
	C as % to A		9.35	8.72	9.08	6.22	5.28	5.85	5.61	4.62	5.25	4.56	3.10	4.04	
5	Seventh Survey (2002)	A	65362563	57552738	122915301	26233546	20612299	46845845	128019999	9066899	21888898	5695312	411706	9807018	
		B	13810001	12093831	25903832	4827464	3606526	8433990	2038845	1330672	3369517	783117	501173	1289290	
		C	6204679	5310150	11514829	1978200	1376149	3354349	756399	475775	1232174	271533	145424	416957	
	B as % to A		21.13	21.01	21.07	18.40	17.50	18.00	1.90	14.64	15.30	13.75	121.73	13.15	
	C as % to A		9.49	9.22	9.37	7.54	6.68	7.16	0.59	5.24	5.63	4.77	35.32	4.25	
6	2005-06	A	70496494	61552233	132048727	28865105	23330066	52195171	14473940	10497580	24971520	7816516	5597983	13414499	
		B	13988028	11324770	25312798	5312550	3834280	9146830	2297845	1465594	3763439	1114836	719548	1834384	
		C	7513442	6600894	14114336	2515295	1950244	4465539	930029	628272	1558301	410054	235037	645091	
	B as % to A		19.84	18.40	19.17	18.40	16.43	17.52	15.88	13.96	15.07	14.26	12.85	13.67	
	C as % to A		10.66	10.72	10.69	8.71	8.36	8.56	6.43	5.98	6.24	5.25	4.20	4.81	

Enrolment of A = (All Communities), Enrolment of B = (Scheduled caste), Enrolment of C = (Scheduled Tribes)

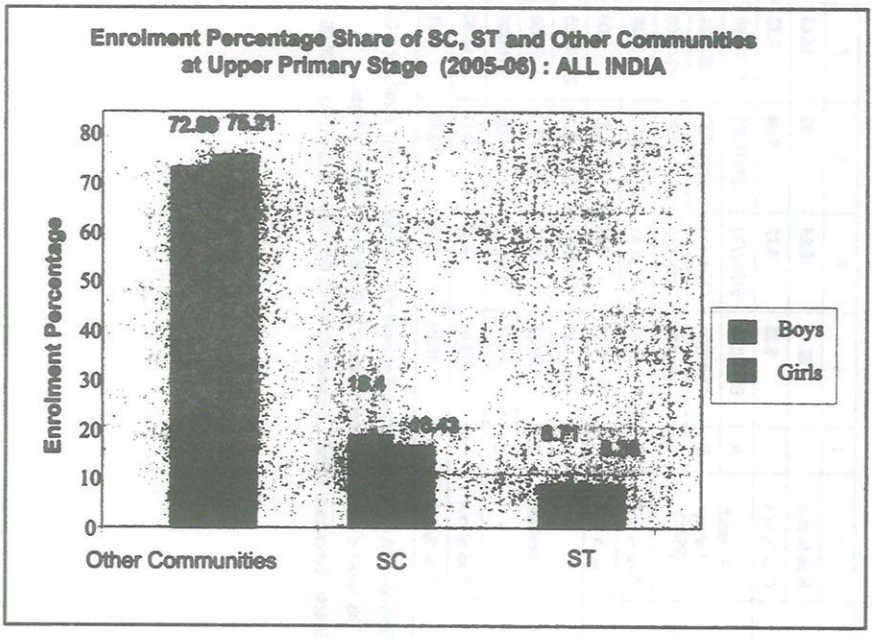
* This does not include enrolment of classes XI-XII attached to degree colleges.

Selected Educational Statistics (Provisional) MHRD, GoI, www.education.nic.in, 2005-06

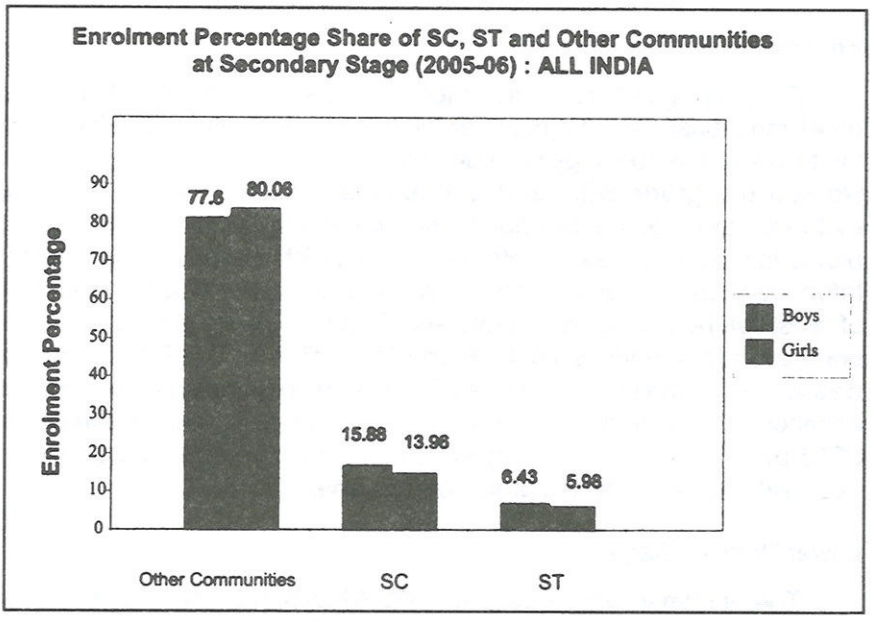
Graph 10



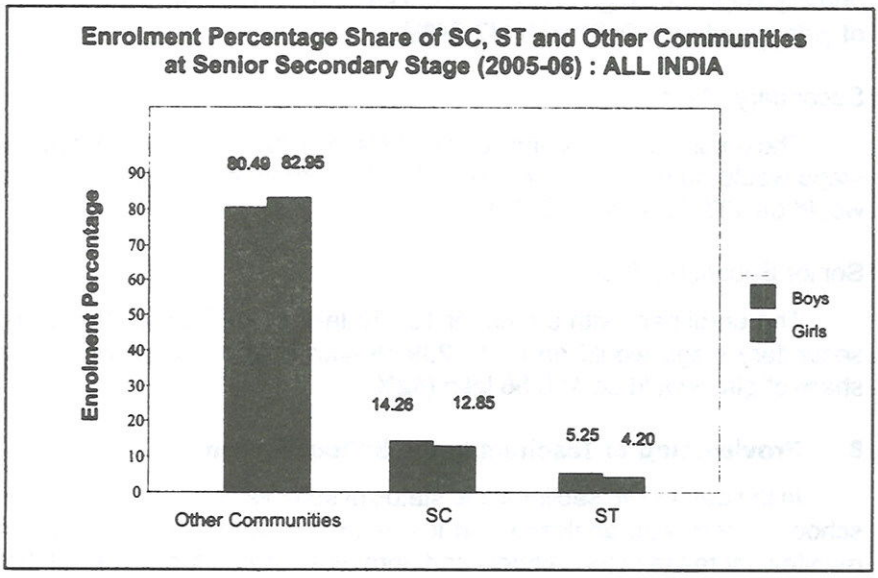
Graph 11



Graph 12



Graph 13



7. Projected Enrolment by Stages of School Education (2006-07 – 2011-12)

Enrolment

For working out broad estimates for demand and supply of teachers on All India basis, the projected enrolment is one of the bases for which the following methodology has been used. Projected enrolment has been worked out grade-wise and gender-wise, based on the standard methodology of (Student-Cohort Model) which requires the repetition rate, promotion rate and drop-out rate grade-wise which is available from District Information System of Education (DISE) published by NUEPA. The data of repetition rate, progression rate and drop-out rate for grades I-VIII has been used for the years 2005-06 and 2006-07 from DISE data. For the classes IX-XII, the progression rate from grade to grade has been used in absence of repetition and promotion rate. The projected enrolment for 2006-07 till 2011-12 as reflected under Table 4 offers the following observations based on the projected enrolment.

Lower Primary Stage

The enrolment with a base of 1320.49 lakh in 2005-06 at the lower primary stage would go up to 1539.52 lakh in 2011-12, of which the share of girls would be 699.18 lakh (45.42 %).

Upper Primary Stage

The enrolment with a base of 521.95 lakh in 2005-06 at the upper primary stage would go up to 580.24 lakh in 2011-12, of which the share of girls would be 277.61 lakh (47.84%).

Secondary Stage

The enrolment with a base of 249.72 lakh in 2005-06 at the secondary stage would go up to 316.08 lakh in 2011-12, of which the share of girls would be 137.08 lakh (43.37%).

Senior Secondary Stage

The enrolment with a base of 134.15 lakh in 2005-06 at the senior secondary stage would go up to 239.48 lakh in 2011-12, of which the share of girls would be 100.58 lakh (42%).

8. Provisioning of Teachers in the School System

In the earlier two sections, the status of schools and enrolment in the school system was analyzed and it was observed that there has been manifold increase in the schools and enrolment. It was further noted that from the equity point of view, the school system has unfolded inclusive

growth taking into consideration the urban and rural habitations, improvement in enrolment of girls, children belonging to scheduled castes and scheduled tribes. However, there was a gap of this educationally backward group due to socio-economic factors. In the present section, analysis has been made related to the provisioning of the teachers with the expansion of schools and enrolment. The trend has been examined along the following elements:

(1) Trend-analysis of provisioning of teachers
(2) Status of trained and untrained teachers
(3) Participation of women teachers
(4) Para teachers

Trend-analysis of Provisioning of Teachers

With the expansion of schools and enrolment, there has been deployment of teachers at all levels of school system. Table 7 reflects the provisioning of teachers at lower primary, upper primary, secondary and senior secondary stages of school education covering period 1950-51 till 2005-06. Some of the observations related to the provisioning of teachers for the respective categories of school stage are as under:

Provisioning of Teachers

Lower Primary Stage

The number of primary teachers in 1950-51 at the lower primary stage was 538 thousands which increased to 2184 thousand in 2005-06, i.e., almost four-fold increase over the period. If this increase is calculated in terms of annual growth rate, then it accounted to 2.69%. In case of women teachers, this annual growth rate was 4.35% and in case of men 1.94%.

Upper Primary

The number of primary teachers in 1950-51 at the upper primary stage was 86 thousands which increased to 1671 thousand in 2005-06, i.e., almost nineteen-fold increase over the period. If this increase is calculated in terms of annual growth rate, then it accounted to 4.57%. In case of women teachers, this annual growth rate was 6.56% and in case of men 3.56%.

Secondary and Senior Secondary Stages

Separate data of secondary and senior secondary school teachers covering period 1950-51 till 1986-87 were not available; hence, trend-analysis of secondary and senior secondary teachers for this period could not be made. Separate data of secondary and senior secondary school teachers are available from the year 1996-97 onwards. Based on this

Table 7 : Teachers at Different Stages

(As on 30th September) (In Thousands)

Year	Lower Primary			Upper Primary			Secondary			Senior Secondary		
	Teachers											
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1950-51	456	82 (15.24)	538	73	13 (15.12)	86	107	20 (15.75)	127	Combined Secondary and Senior Secondary Schools		
1960-61	615	127 (17.12)	742	262	83 (24.06)	345	234	62 (20.95)	296			
1970-71	835	225 (21.23)	1060	463	175 (27.43)	638	438	138 (23.96)	576			
1980-81	1020	343 (25.17)	1363	570	261 (31.41)	831	N A	N A	N A			
1986-87	1105	417 (27.40)	1522	665	314 (32.07)	979	831	368 (30.69)	1199			
1996-97	1205	585 (32.68)	1790	768	428 (35.77)	1196	595	331 (35.74)	926	408	208 (33.75)	616
2001-02	1213	715 (37.09)	1928	921	547 (37.25)	1468	635	384 (37.65)	1019	522	237 (31.20)	759
2002-03	1167	746 (39.02)	1913	936	645 (40.80)	1581	616	380 (38.17)	996	605	432 (38.47)	1037

(Cont'd...)

1	2	3	4	5	6	7	8	9	10	11	12	13
2004-05	1319	842 (38.97)	2161	992	597 (37.56)	1589	668	415 (38.35)	1083	614	386 (38.47)	1000
2005-06	1326	858 (39.29)	2184	998	673 (40.29)	1671	696	427 (38.06)	1123	638	394 (38.17)	1032
Annual Growth Rate Between (1950-51-2005-06)	1.94	4.35	2.69	3.56	6.56	4.57	1.69*	2.34*	1.93*	5.03*	10.69*	7.00*

Source: As per Table 2.
NA = Not Available

Note: Figures in brackets indicate the percentage of the total.

* The annual growth rate indicated between 1996-97 and 2005-06.

trend, it could be stated that the number of secondary school teachers went up from 926 thousand in 1996-97 to 1123 thousand in 2005-06. In case of women teachers, the number increased from 331 thousand to 427 thousand and in case of men teachers, their number increased from 595 thousand in 1996-97 to 696 thousand in 2005-06. At the senior secondary stage, the number of senior secondary teachers increased from 616 thousand in 1996-97 to 1032 thousand in 2005-06. The number of women teachers increased from 208 thousand in 1996-97 to 394 thousand in 2005-06. So far as annual growth rate is concerned, in case of secondary teachers it was 1.93% and in case of senior secondary teachers it was 7.00%. It was encouraging to note that the induction of women teachers at secondary and senior secondary stages was maintained at higher annual growth rate. In case of secondary stage, the induction of women teachers increased @ 2.34% annually between 1996-97 and 2005-06 and at the senior secondary stage, it increased @ 10.69% between 1996-97 and 2005-06.

Status of Trained and Untrained Teachers

The provisioning of teachers in the school system is not only critical but also of the the well-qualified and trained teachers so that teaching-learning process in the classrooms should lead to higher scholastic as well as non-scholastic learning achievements of the learners. It is, in this context, that all the education commissions, committees, parliament resolutions and teacher education forums and associations have emphasized the need of induction of qualified and trained teachers in the school system. However, the trend-analysis indicates that there still exists a significant gap of having trained and qualified teachers in the school system. This fact is reflected in Table 8.

Table 8: Status of Untrained Teachers

(In Percentage)

	1951	1961	2006
Primary Schools	59	65	14
Middle Schools	53	65	13
High Schools	54	68	11
Higher Secondary Schools	NA	NA	10

Source: 1. Third Five Year Plan (1992) Planning Commission, Government of India pp 302-303 for the years 1951 and 1961.
2. Selected Educational Statistics (2005-06), MHRD, Government of India.

Participation of Women Teachers

As part of national policy, particularly at the lower and upper primary stages, 50% of the inducted teachers should be women teachers for obvious advantage of dealing with the children of age group 6-14. Under Sarva Shiksha Abhiyan (SSA), an affirmative intervention has been made to have more women teachers in the lower and upper primary schools where the teaching-learning process is not subject-specific and appointment of women teachers is done by the local administration. The trend-analysis under Table 7 clearly indicates that over the period between 1950-51 and 2005-06, the participation rate of women teachers has been on the rise. At the lower primary stage, in 1950-51, the women teachers' force constituted only 15.24% which increased to 39.29% in 2005-06. At the upper primary level, women teachers constituted 15.12% which increased to 40.29% in 2005-06, at the secondary and senior secondary stages women teachers constituted 15.75% in 1950-51. In 2005-06, this percentage improved to 38.06%. Obviously, in terms of teaching force, the participation rate of women teachers has been constantly rising that shows the preference of women to take this profession, on the one hand, and implementation of policy of the government in right direction to induct more women teachers, on the other.

Para Teachers

Given the scope of Education for All as a national policy agenda, providing a school in each habitation has put enormous demand on resources for school teachers particularly at the lower and upper primary stage. To cope with this situation, the state governments have recently inducted para teachers as part of teaching force in significant numbers so as to reduce the high teacher pupil ratio, additional provision of teachers in single teacher schools, as a substitute of regular school teachers due to delay in their recruitment and to reduce the problem of teacher absenteeism in the rural habitations. These para teachers with different nomenclatures and on a consolidated remuneration per month which is lower than the rate of a regular teacher's salary are working. Their number as well as recruitment policy (terms of appointment and academic and professional qualification) vary from state to state. Under Sarva Shiksha Abhiyan (SSA), these para teachers are part of the fund allocation by the Central Government (MHRD) to the state governments. In this context, their induction as part of teaching force is a matter of significance for quality inputs in teaching-learning process at the lower and upper primary stage. It required that, if these teachers, in the longer term of their service, are to be made regular as a part of state government policy, then their academic and professional qualification should match and be compatible to a regular teacher. DISE data (NUEPA, 2009 p 32) provided the status of these para teachers in terms of their pattern of distribution (percentage trained) across the state/UTs for the years 2005-06, 2006-07 and

2007-08. The document released by NUEPA indicates that at All India Level, the percentage of trained para teachers constituted 47.83% in 2005-06, 44.88% in 2006-07; and 45.54% in 2007-08. It implied that more than 50% para teachers inducted during these years were untrained which was against the prevailing norms and standards of NCTE (December, 2007).

9. Projected Demand and Supply of Teachers at the School Stage

Methodology on Projection of Demand and Supply of Teachers at School Stage

While analyzing the enrolments trends covering period 1950-51 till 2005-06 for various stages of school education, projection of enrolment for the years 2006-07 till 2011-12 under Table 4 for various stages was also reflected. The procedure of projecting additional demand for teachers for various stages of school education was made as under:

Parameters considered for Estimating Projected Demand for Teachers

The following broad parameters have been used in estimating the projected demand for school teachers:

1. Projected enrolment of classes I-XII.
2. Teacher pupil ratio (considered as a proxy of a section).
3. Provisioning of one and half teacher per additional section as minimum requirement due to subject-specific consideration and streaming for secondary and senior secondary stage only.
4. Teaching load per teacher (a proxy of weekly periods per teacher out of the weekly school periods) considered only at the secondary and senior secondary stages, i.e., classes IX, X, XI and XII.
5. Attrition rate of teachers.
6. Backlog in demand for teachers originating from the existing number of untrained teachers.

Reference Date of Enrolment

Instead of taking average enrolment or attendance, 30th September of a calendar year is taken as a base for providing and rationalizing the teaching staff in the school as by that time enrolment is usually stabilized and data on enrolment in MHRD or in the state government is referred to this date.

Formula for Estimating Additional Demand for Teachers for Different Stages

The following formulas are used for estimating aggregate demand for teachers for different stages of school education.

(1) Lower Primary/Upper Primary (Classes I-VIII)

Additional demand for lower and upper primary teachers = Projected Additional Enrolment for the given year

TPR (1:40)

Note: *As per Sarva Shiksha Abhiyan norms, the provisioning of teachers at lower and upper primary is considered one teacher for one class or TPR 1:40.*

(2) Secondary Stage (Classes: IX-X)

Additional demand for secondary teachers = Projected Additional Enrolment for the given year x weekly periods in schools (48) x 3

TPR (1:25) x teaching load per teacher (32) x 2

Note: *The additional sections based on the additional projected enrolment have been multiplied by a factor of 2.25 based on the above formulation.*

(3) (a) Senior Secondary Stage (Classes: XI-XII): Arts & Humanities/ Commerce/Science/Vocational Streams

Additional demand for senior secondary teachers = Projected Additional Enrolment for the given year x weekly periods in schools (48) x 3

TPR (1:25) x teaching load per teacher (28) x 2

Note: *The additional sections based on the additional projected enrolment have been multiplied by a factor of 2.571 based on the above formulation.*

To arrive at the net demand for teachers for the given year, the following adjustment has been made.

Net Demand for Teachers in a given year = Additional demand for teachers based on additional sections in a given year + Replacement of retiring teachers as per stated attrition rate + Backlog in demand for teachers originating from the number of untrained teachers.

Attrition

DISE data (NUEPA, 2008) provided the actual number of teachers falling in the age group of 55 and above for lower and upper primary stage serving in the years 2005-06 and 2006-07. This actual number has been considered for both the stages and distributed equally for the next five years assuming that these teachers would retire from the active service.

For teachers at secondary and senior secondary stage, the attrition has been assumed @ 3% per annum in the absence of data on age profile of these categories of teachers. This attrition rate is the standard practice in the literature on the subject.

10. Projected Supply of Teachers

To meet the additional demand of teachers, there are two approaches which could be considered:

(1) Out-turn of student teachers from teacher education institutions for various categories of courses (Certificate Courses, Diploma Courses, Graduate Courses and Post-Graduate Courses in Teacher Education)

(2) Approved intake of teacher education courses under various categories is as listed under item 1.

The out-turn does not reflect the true picture of supply while considering the assessment of manpower planning in teacher education courses because the out-turns of these various categories of teacher education courses are lacking consistency and full reporting by various agencies responsible for admission, evaluation, certification and awarding of diplomas and degrees. In the present set up, teacher education courses at the elementary stage (D.Ed. courses) are governed by the state government and degree and post-graduate courses (B.Ed., M.Ed. etc.) are governed by the university system. In the present analysis since assessment is to be made for future manpower planning in teacher education, it was considered appropriate to take into account the approved intake of various teacher education courses by the National Council for Teacher Education (NCTE), an apex agency for providing recognition of these courses in the year 2007-08. So, while estimating supply side against the additional demand of school teachers, the approved intake has been considered as supply side. For assessment of demand and supply of post-graduate courses in teacher education courses (M.Ed.), the additional demand of B.Ed. teachers (as a proxy of additional demand of B.Ed. courses) has been considered. The additional demand of B.Ed. courses has been divided by a teacher pupil ratio 1:12 as an approved norm by NCTE for M.Ed. courses, with this assumption that after a batch of 12 B.Ed. students 1 M.Ed. student is required as a teacher educator.

Projected Additional Demand of Teachers at Lower Primary Stage

Table 9 reflects the additional demand estimates of teachers at the lower primary stage for the years 2007-08 till 2011-12 taking into account the base year of 2005-06. The additional demand of lower primary teachers included the following:

(1) Additional enrolment converted into additional sections by dividing the additional enrolment by 1:40.

(2) Attrition teachers (actual).
(3) Reducing the backlog of untrained teachers.

As seen from the Table 9 (col. 10), the additional demand of lower primary school teachers was estimated at 1,99,688 in 2007-08 which would be 1,16,643 in 2011-12. The declining trend in the additional demand of teachers at this stage was due to the declining enrolment.

Projected Additional Demand of Teachers at Upper Primary Stage

Table 10 reflects the additional demand of estimates of teachers at the upper primary stage for the year 2007-08 till 2011-12 taking into account the base year of 2005-06. The projection of additional enrolment has been worked out in a similar manner as explained under para 8.2 and the footnote of Table 9. It is estimated that the additional demand for the upper primary stage in 2007-08 would be 87,118 which would decline to 65,110 in 2011-12. This decline in additional demand of upper primary teachers was attributed to the decline in the additional enrolment at upper primary stage.

Projected Additional Demand of Teachers at Secondary Stage

Table 11 reflects the estimates of projected demand of teachers at the secondary stage based upon the projected enrolment for period between 2007-08 and 2011-12. In 2007-08, the additional demand of secondary teachers was estimated at 1,55,952 which would go down to 1,44,683 in 2011-12.

Projected Additional Demand of Teachers at Senior Secondary Stage

Table 12 reflects the estimates of projected demand of teachers at the senior secondary stage based upon the projected enrolment for period between 2007-08 and 2011-12. In 2007-08, the additional demand of senior secondary teachers was estimated 2,17,514 which would go up to 2,33,352 in 2011-12. It may be pointed out here that the additional demand of different categories of school teachers (lower primary, upper primary, secondary and senior secondary) should be viewed based on the conceptual educational structure at the national level. However, at the ground level, different structures of school education are prevailing and all the States/UTs run composite and structure based school system, hence, estimates of additional demand should be only indicative of the structure based national education pattern. The national structure of school education is understood with: (i) lower primary (classes I-V); (ii) upper primary (VI-VIII); (iii) secondary (classes IX-X); and (iv) senior secondary (classes XI-XII). So, the variation in additional demand of school teachers at different stages of school education would be due to this factor. Graphic presentation of the projected additional demand of school teachers for different stages of school education is reflected under Graphs 14, 15, 16 and 17.

Status of Approved Intake in Teacher Education Institutions in Relation to Additional Demand of School Teachers

The supply aspect in relation to additional demand of teachers for various stages of school education has been considered with respect to approved intake of various teacher education courses in the year 2007-08. Table 13 reflects the status of recognized teacher education institutions, courses and approved intake by the NCTE for the year 2007-08. For the purpose of matching additional demand of teachers with approved intake of teacher education courses, Tables 14, 15, 16 and 17 reflect the deficit (-) or surplus (+). The analysis clearly show that if this intake is studied in relation to additional demand, then the conclusions can be drawn as under:

Lower Primary Stage

As seen from col.4 of Table 14, it is observed that the approved intake of elementary teacher education courses (Diploma Courses in Elementary Education) by the NCTE for the year 2007-08 exceeded the required additional demand of lower primary teachers. So, by policy implication, it would mean that in future the approved intake should be more realistic to the extent of the additional demand. In 2007-08, the surplus of intake was estimated to the tune of 94,730 which would go up to 1,77,774 in 2011-12.

Upper Primary, Secondary and Senior Secondary Stages

Similarly, as seen from col.4 of Table 15, the approved intake of graduate level teacher education courses also exceeded the additional demand of upper primary, secondary and senior secondary school teachers. In 2007-08, the excess of this intake was estimated 92,639 which would go up to 1,10,078 in 2011-12. So, by policy implication it would mean that in future, the approved intake should be more realistic to the extent of the additional demand. It may be added that in case of upper primary teachers, the requirement of graduation with B.Ed. degree was taken into account keeping in view the upgraded curriculum in classes VI-VIII, hence, the additional demand of school teachers has been merged with secondary and senior secondary school teachers and shown against the intake of B.Ed. courses.

Status of Approved intake in M.Ed. Courses in Relation to Additional Demand

Table 16 reflects the status of M.Ed. teacher education courses in relation to the additional demand of B.Ed. teachers. As a batch of 12 B.Ed. students (as a proxy of B.Ed. teachers) is considered for 1 M.Ed. (as a proxy of teacher educators), this ratio of 1:12 is a standard norm of NCTE for all categories of teacher education courses in teacher education institutions to maintain the quality. The column 8 of Table 16 does indicate

that there was deficit of M.Ed. courses against the projected additional demand of upper primary, secondary and senior secondary school teachers for the years 2007-08 till 2011-12. The deficit has been worked out after adjustment of already approved M.Ed. courses by the NCTE for the year 2007-08. The deficit of M.Ed. courses was estimated 23,989 in the year 2007-08 which would be 22536 in 2011-12. It may be noted that this deficit is based on the additional requirement of M.Ed. courses against the additional demand of teachers at the upper primary, secondary and senior secondary stages of school education.

Status of Supply in Relation to Demand for Physical Education Courses

Physical education is one of the core subject of school curriculum. As such there is a provision of deploying physical education teachers in upper primary, secondary and senior secondary schools. Generally, physical education teachers are not deployed in lower primary schools. Primary school teachers are given the responsibility of undertaking physical education classes. The analysis on projected schools of lower primary, upper primary, secondary and senior secondary carried out for the period 2007-08 till 2011-12, indicated in Table 1, shows the projected number of schools for this period. The additional number of schools and assessment of additional demand in relation to the additional intake approved in physical education courses given by NCTE for the year 2007-08 is reflected under Table 17. Based on the approved intake in physical education (C.P.Ed. + B.P.Ed.) in 2007-08, it could be observed that the additional demand of physical education courses was less, rendering surplus for these courses for the next five years. In 2007-08 the surplus of intake of physical education courses was estimated 11,914 which would go up to 15,264 in 2011-12. By policy implication, it would mean that the approved intake should be more realistic to the extent of the additional demand of physical education courses.

Table 9 : Projected Enrolment and Demand for Teachers at Lower Primary Stage

(As on 30th September)

Years	Total Enrolment of Lower Primary	Additional Enrolment of Lower Primary	Additional Section Required @ 40 Student Per Section	Add. Teachers Required for Add. Sections as Per Norms	Existing Stock of Teachers in 2005-06	Attrition of Teachers (Actual)	Reducing the Backlog of Untrained Teachers	Additional Demand for Teachers Including Attrition Col.5+Col.7	Cumulative Additional Demand of Teachers Col.8+Col.9
1	2	3	4	5	6	7	8	9	10
2005-06	**132048727**				2183479		305687		
2006-07	**136738323**	4689596	117240	117240	2160021	23458	50948	140698	191646
2007-08	**141725023**	4986700	124668	124668	2135949	24072	50948	148740	199688
2008-09	**146093860**	4368837	109221	109221	2116691	19258	50948	128479	179427
2009-10	**149783163**	3689303	92233	92233	2101285	15406	50948	107639	158587
2010-11	**151718610**	1935447	48386	48386	2088960	12325	50948	60711	111659
2011-12	**153951996**	2233386	55835	55835	2079100	9860	50948	65695	116643

Source: For col.2, col.6 and col.8 in the year 2005-06 from Selected Educational Statistics (Provisional), MHRD, New Delhi

Note: 1. For projection of enrolment for the years 2006-07 onwards for classes I-VIII is based on the technique of Student-Cohort Model which takes into account the repetition rate, drop-out rate and promotion rate while projecting the enrolment for the next successive years. Data on repetition rate, drop-out rate and progression rate for these classes was drawn from DISE data (NUEPA) for the years 2004-05, 2005-06 and 2006-07. For classes IX-XII, projections are based on progression rate in the absence of data on repetition rate and drop-out rate.

(Cont'd...)

2. Attrition rate of teachers worked out from **DISE** data (**NUEPA**) of lower and upper primary teachers for the age profile of teachers falling under the category of 55 years and above for the years 2005-06, 2006-07. The actual numbers so derived in the year 2006-07 has been further divided equally over the next five years. Attrition rate for secondary and senior secondary school teachers has been assumed 3%.

3. Additional requirement of teachers has been worked out by this formula -

= Additional enrolment / (1: 40) T.P.R. as per **SSA** Norms.

Table 10 : Projected Enrolment and Demand for Teachers at Upper Primary Stage

(As on 30th September)

Years	Total Enrolment of Upper Primary	Additional Enrolment of Upper Primary	Additional Section Required @ 40 Student Per Section	Add. Teachers Required for Add. Sections as Per Norms	Existing Stock of Teachers in 2005-06	Attrition of Teacher (Actual)	Additional Demand for Teachers Including Attrition Col.5+Col.7	Reducing the Backlog of Untrained Teachers	Cumulative Additional Demand of Teachers Col.8+Col.9
2005-06	52195171				1671495			217294	
2006-07	52011534				1669866	1629		36216	
2007-08	53704365	1692831	42321	42321	1661285	8581	50902	36216	87118
2008-09	54363718	659353	16484	16484	1654420	6865	23349	36216	59565
2009-10	55647579	1283861	32097	32097	1648928	5492	37588	36216	73804
2010-11	57008568	1360989	34025	34025	1644534	4394	38418	36216	74634
2011-12	58023720	1015152	25379	25379	1641019	3515	28894	36216	65110

Source: For col.2, col.6 and col.8 in the year 2005-06 from Selected Educational Statistics (Provisional), MHRD, New Delhi

Note: 1. For projection of enrolment for the years 2006-07 onwards for classes I-VIII is based on the technique of Student-Cohort Model which takes into account the repetition rate, drop-out rate and promotion rate while projecting the enrolment for the next successive years. Data on repetition rate, drop-out rate and progression rate for these classes was drawn from DISE data (NUEPA) for the years 2004-05, 2005-06 and 2006-07. For classes IX-XII, projections are based on progression rate in the absence of data repetition rate and drop-out rate.

2. Attrition rate of teachers worked out from DISE data (NUEPA) of lower and upper primary teachers for the age profile of teachers falling under the category of 55 years and above for the years 2005-06, 2006-07. The actual numbers so derived in the year 2006-07 has been further divided equally over the next five years. Attrition rate for secondary and senior secondary school teachers has been assumed 3%.

3. Additional requirement of teachers has been worked out by this formula -

= Additional enrolment / (1: 40) T.P.R. as per SSA Norms.

Table 11 : Projected Enrolment and Demand for Teachers at Secondary Stage

(As on 30th September)

Years	Total Enrolment	Additional Enrolment of Secondary Stage	Add. Sections required @ 25 Students per Section	Add.Teachers req. for add. Sections as per Norms	Existing Stock of Teachers after Adjustment of Attrition	Attrition of Teacher @ 3% (Actual)	Additional Demand for Teachers Including Attritions Col.5+col. 7	Reducing the Backlog of Untrained Teachers	Cumulative Additional Demand of Teachers Col.8+Col.9
2005-06	**24971520**				1122876			123516	
2006-07	**26134682**	1163162	46526	104685	1089190	33686	138371	20586	158957
2007-08	**27275680**	1140998	45640	102690	1056514	32676	135366	20586	155952
2008-09	**28375602**	1099922	43997	98993	1024819	31695	130688	20586	151274
2009-10	**29465533**	1089931	43597	98094	994074	30745	128838	20586	149424
2010-11	**30550102**	1084569	43383	97611	964252	29822	127433	20586	148019
2011-12	**31607537**	1057435	42297	95169	935324	28928	124097	20586	144683

Source: For col.2, col.6 and col.8 in the year 2005-06 from Selected Educational Statistics (Provisional), MHRD, New Delhi

Note: For projected additional enrolment, additional sections, additional teachers and attrition rate see methodology under para 8.

Table 12 : Projected Enrolment and Demand for Teachers at Senior Secondary Stage

(As on 30th September)

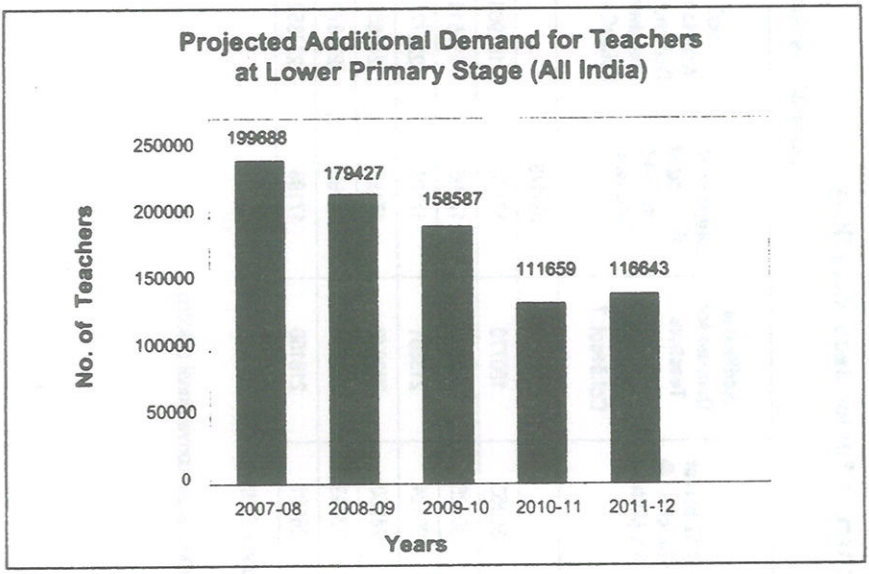
Years	Total Enrolment of Senior Secondary Stage	Additional Enrolment of Senior Secondary Stage	Add. Sections required @ 25 Students per Section	Add.Teachers req. for add. Sections as per Norms	Existing Stock of Teachers After Adjustment of Attrition	Attrition of Teacher @ 3% (Actual)	Additional Demand for Teachers including Attritions Col.5+col. 7	Reducing the Backlog of Untrained Teachers	Total Additional Demand of Teachers Col.8+Col.9
2005-06	13447666				1031779			103178	
2006-07	14904459	1456793	58272	149817	1000826	30953	180770	17196	197966
2007-08	16560367	1655908	66236	170294	970801	30025	200318	17196	217514
2008-09	18354001	1793634	71745	184457	941677	29124	213581	17196	230777
2009-10	20254249	1900248	76010	195422	913427	28250	223672	17196	240868
2010-11	22104413	1850164	74007	190271	886024	27403	217674	17196	234870
2011-12	23947810	1843397	73736	189575	859443	26581	216156	17196	233352

Note: 1.Figures of enrolment 2002-03 to 2005-06, trained and un-trained taken from Selected Educational Statistics, (Provisional), MHRD.

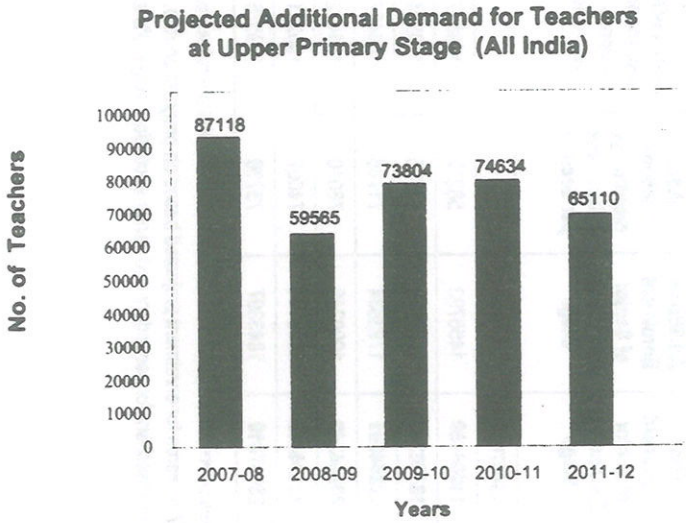
2. For 2006-07 onwards for enrolment projected based on progression rate.

3. Attrition rate of teachers for secondary and senior secondary stage, 3% attrition rate has been assumed as per conventional practice.

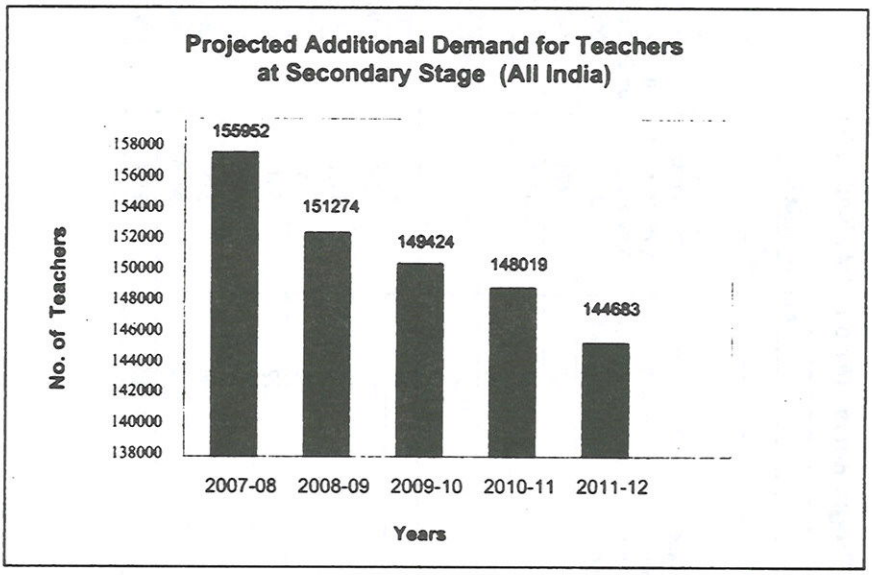
Graph 14



Graph 15



Graph 16



Graph 17

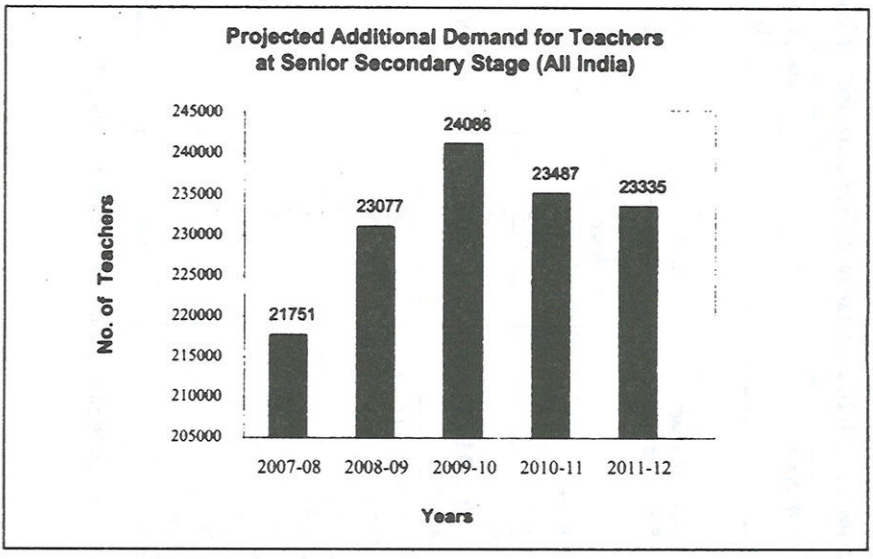


Table 13 : All India Status of Recognition of Teacher Education Programmes (As on 31st March, 2008)

Total No. of Institutions	As on 31.03.2007	As on 31.03.2008
	7597	9773

Sl. No.	Name of Teacher Education course	Total No. of Courses Recognised as on 31st March, 2007	No. of Courses granted recognition during 2007-20008	No. of Courses withdrawn recognition during 2007-2008	Total No. of Courses recognised as on 31st March, 2008	Total intake approved as on 31st March, 2007	Total intake approved as on 31st March, 2008
1	Pre-Primary	213	29	0	242	10478	11988
2	Elementary	4136	1006	14	5128	240667	294417
3	B.El.Ed	13	1	0	14	442	492
4	Secondary (B.Ed) Face to Face Mode	4034	999	3	5030	416472	520432
5	Secondary (B.Ed) (DE)	21	8	0	29	12850	17350
6	M.Ed-Face to Face	304	215	0	519	7428	12788
7	M.Ed (DE)	9	0	0	9	1455	1455
8	M.Ed (PT)	6	0	0	6	150	150
9	C.P.Ed	99	23	0	122	5097	6247
10	B.P.Ed	398	53	1	450	23889	26489
11	M.P.Ed	75	15	0	90	2152	2602
12	Others	178	46	0	224	12649	14949
13	Total	9486	2395	18	11863	733729	909359

NCTE (2009), 13th Annual Report: 2007-08, New Delhi Annexure I, p 22

Table 14 : Status of Supply in Relation to Demand for Lower Primary Teachers

Years	Additional Demand of Teachers at Lower Primary Stage	Approved Intake of NCTE of Elementary Stage Courses at 2007-08 Level	Deficit (-) or surplus (+) of Teachers Col. 2 - Col. 3
2007-08	199688	294417	(+) 94730
2008-09	179427	294417	(+) 114990
2009-10	158587	294417	(+) 135830
2010-11	111659	294417	(+) 182758
2011-12	116643	294417	(+) 177774

Source : For col. 2 Table 9 (col.10) and for col. 3 Table 13 (col.8).

Note : Col. 3 is the Total intake of NCTE recognized D.Ed. Courses for the years 2007-08.

Symbol (-) indicates additional intake required and symbol (+) indicates surplus of intake.

Table 15 : Status of Supply in Relation to Demand for Upper Primary, Secondary and Senior Secondary School Teachers

Years	Additional Demand of Teachers at Upper Primary	Additional Demand of Teachers at Secondary Stage	Additional Demand of Teachers at Senior Secondary Stage	Additional Demand of Teachers Col. 2+ Col. 3 + Col. 4	Approved Intake By NCTE Secondary level courses at 2007-08 Level	Deficit(-) or surplus (+) of Teachers Col. 5 - Col. 6
2007-08	87118	155952	217514	460584	553223	(+)92639
2008-09	59565	151274	230777	441616	553223	(+)111607
2009-10	73804	149424	240868	464096	553223	(+)89127
2010-11	74634	148019	234870	457523	553223	(+)95700
2011-12	65110	144683	233352	443145	553223	(+)110078

Source: For col.2, 3 and 4 Tables 10, 11 and 12 (col.10) and for col.6 Table 13 (col.8).

Note: Col. 6 is the sum total of approved intake of NCTE recognised Courses for the years 2007-08. These courses include B.El.Ed. (492), Secondary B.Ed Face to Face (520432), Secondary B.Ed. Distance Education Mode (17350) and Others (14949), total intake = 553223.

Symbol (-) indicates additional intake required and symbol (+) indicates surplus of intake

Table 16 : Status of Supply in Relation to Demand for M.Ed. Teacher Education Courses

Years	Additional Demand of Teachers at Upper Primary	Additional Demand of Teachers at Secondary Stage	Additional Demand of Teachers at Senior Secondary Stage	Additional Demand of Teachers Col.2+Col.3+Col.4	Required Demand of M.Ed. Courses col.5/12	Approved Intake By NCTE of M.Ed. Courses at 2007-08 Level	Deficit(-) or surplus(+) of M.Ed. Intake Col.6 - Col.7
2007-08	87118	155952	217514	460584	38382	14393	(-)23989
2008-09	59565	151274	230777	441616	36801	14393	(-)22408
2009-10	73804	149424	240868	464096	38675	14393	(-)24282
2010-11	74634	148019	234870	457523	38127	14393	(-)23734
2011-12	65110	144683	233352	443145	36929	14393	(-)22536

Source: For col.2, 3, 4 and 5 Table 15 and for col.7 Table 13 (col.8).

Note: For working out the additional requirement of M.Ed courses, see para 8 for methodology.
Symbol (-) indicates additional intake required and symbol (+) indicates surplus of intake

Table 17 : Status of Supply in Relation to Demand for Physical Education Courses

Year	Projected Number of Schools			Projected Additional Number of Schools			Total Additional Number of Schools (col.5+6+7)	Approved Intake of NCTE approved Physical Education Courses at 2007-08 level	Deficit (-) or Surplus (+) of Approved Intake col.8-9
	Upper Primary	Secondary	Senior Secondary	Upper Primary	Secondary	Senior Secondary			
1	2	3	4	5	6	7	8	9	10
2005-06	288493	106024	53643						
2006-07	287478	110963	59596	1015	4939	5953	11907		
2007-08	296835	115807	66218	9357	4844	6621	20822	32736	(+)11914
2008-09	300479	120477	73389	3644	4670	7172	15486	32736	(+)17250
2009-10	307575	125105	80988	7096	4628	7598	19322	32736	(+)13414
2010-11	315098	129710	88386	7522	4605	7398	19525	32736	(+)13211
2011-12	320709	134199	95757	5611	4490	7371	17472	32736	(+)15264

Source: 1. For column 2, 3 and 4 based on Table 1 and col.5, 6 and 7 are worked out by subtracting from col.2, 3 and 4 of the Table for each successive year.

2. For col.9 is based on Table 13 (col.8).

Note:1 For working out supply in relation to additional demand for physical education teachers, the additional number of schools of upper primary, secondary and senior secondary schools have been considered with this assumption that for each additional school, there would be need of 1 additional physical education teacher. Lower primary schools have been left out because at present there is no practice of deploying physical education teachers in these schools.

2. Under approved intake in physical education courses include Certificate Course in Physical Education (6247) and Bachelor of Physical Education (2648)

3. Symbol (-) indicates additional intake required and symbol (+) indicates surplus of intake.

11. Summing up

The theme of the paper related to quantitative analysis of the growth of schools, enrolment and teachers covering period 1950-51 till 2005-06 and projected demand of additional teachers for various stages of school education. The trend analysis of schools, enrolment and teachers was broad-based covering components of growth, management category, equity issue with respect to the participation rate of girls, children belonging to scheduled castes and scheduled tribes. So far as teachers are concerned, the trend analysis was carried out with respect to their numbers, participation rate of women in the total teaching force, status of trained and untrained teachers and para teachers. This trend analysis showed that there has been tremendous growth of schools, manifold increase in enrolment, reducing the gap between urban and rural areas in schooling facilities, significant improvement in the participation rate of girls,SC, ST children. Similarly, there has been manifold increase in the teaching force with the corresponding increase in enrolment and schools. Further, the participation rate of women teachers at all levels of school has increased. The percentage of untrained teachers got reduced over the period. But at the same time, there is significant percentage of untrained teachers at all stages of school education. It is to be further added that the state governments have deployed para teachers to mitigate the problem of single teacher schools and teacher absenteeism of teachers in the rural schools, as a substitute of regular teachers, to reduce high pupil teacher ratio and containing the financial burden on the state exchequer at the elementary stage. To what extent the policy of their deployment is effective and sustainable is a matter of in-depth studies in different States/UTs.

The analysis was further extended to project the schools, enrolment, teachers and teacher education courses which would be necessary to meet the additional demand of teachers. The analysis covered period between 2007-08 and 2011-12, the terminal year of the 11th Five Year Plan. The analysis revealed that if the additional demand of teachers is juxtaposed against the approved intake of teacher education courses in teacher education institutions at 2007-08 level, the approved intake far exceeded the additional demand. By policy implication, it would mean that the approved intake of teacher education courses in teacher education institutions should be more realistic to the extent for a balanced manpower planning in teacher education in the future. The analysis here was of an All India character and conclusions drawn from this analysis should be understood accordingly. For sake of micro-planning at the district/state level, specific state studies are required for which NCTE is engaged in the process at present.

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Chapter 19

Growth of Teacher Education Institutions: Issues and Problems

SHOEB ABDULLAH

1. Background

"Education" is supposedly the only means available to mankind to bring a desired change in the individual and society at large in a peaceful and harmonious manner. The change agents entrusted with this task are surely teachers as they are the principal means for implementing educational programmes. Elucidating the role of the teacher in society, the Programme of Action (POA) of the National Policy on Education (NPE) 1986 states, "The principal role of teachers is and will always be teaching and guidance of their pupils, not only through classroom interaction and tutorials but by personal contact and numerous other ways teachers have always employed for building the character of their pupils. Teachers have an indispensable role in extension and social service. They have also to participate in the management of a variety of services and activities which educational institutions undertake to implement their programme". It is because of this role that teachers are recognized as nation builders. If destiny of India is being shaped in its classrooms, the architects of this destiny are certainly teachers.

The contribution of a school teacher in shaping the life of an individual and thus shaping the "destiny" of the nation has to be acknowledged. How effectively a school teacher can play the role of a nation builder and do justice to the assigned task depends, to a great extent, on the quality of education one has received in a teacher education institution. Thus, quality of teacher education programmes and the role played by teacher education institutions also assume significance in the task of nation building. "Education of teachers is not only responsible for the improvement of school education by preparing competent, committed and professionally well-qualified teachers who can meet the demands of the system, but it

has also to serve as the joining link between the school and higher education. It has to fulfil the twin demands of the educational system including higher education and the ever-changing demands of the social system. Thus, to fulfil the twin demands mentioned above, a need was felt to revitalize the teacher education system for which a regulatory body, 'National Council for Teacher Education" (NCTE) was established by the Government of India, in 1993, by an Act of Parliament (Act No. 73).

Education is a dynamic process as it has to deal with the ever changing demands and needs of the society. The view that education is a basic need of every individual, and is not only for the chosen few, has been accepted by the society. Intensive efforts are being made by the government for achieving the goal of universalization of education. This has led to an unprecedented growth of our educational system and now when the country has decided to extend the scope of "Sarva Shiksha Abhiyan" (SSA) from elementary education to secondary stage, the school system is due for further growth. In order to keep pace with the demands of the growing school system, teacher education system has to grow at a comparable rate. In fact, rapid growth in teacher education has also been witnessed during the last two decades and it is also due for further expansion. Major contributor in expansion of teacher education system is the private sector.

Any growth, howsoever needed, has to take place in a planned manner so that the desired results are achieved. Moreover, quantitative growth should in no case compromise on the quality dimension. However, growth also gives rise to new problems and raises new issues. Thus, it becomes imperative to take cognizance of the issues and problems emanating from the growth in the teacher education system. Further, India being a large country, the issues and problems may differ from region to region country-wide. The purpose of this paper is to bring out gaps, if any, in the inter-sectoral and inter-regional distribution of teacher education institutions with a focus on the need for systematic planning for the further growth of teacher education in the country. More specifically, the paper focuses on:

- Analysis and identification of growth of teacher education institutions after the establishment of NCTE.
- Factors responsible for the expansion of self-financing institutions.
- Identification of sectors and geographical regions requiring establishment of new teacher education institutions.
- The identification of strategies for planned and coordinated development of teacher education in the country.

2. Growth of Teacher Education Institutions Programmes

The data on teacher education institutions in various sectors of teachers education since the establishment of the NCTE are presented here in Tables 1-15.

Table 1: Growth of Teacher Education Programmes since the establishment of NCTE

Programme	Number of Institutions			
	1995-96	2000-01	2005-06	2007-08
Pre-Primary	72	65	189	242
Elementary	732	1009	3231	5128
B.El.Ed.	-	05	12	14
Secondary (B.Ed.) Face-to-Face	331	887	3268	5030
Secondary (B.Ed.) Distance Mode	-	09	18	29
Physical Education (C.P.Ed., B.P.Ed., M.P.Ed.)	-	258	452	660
M.Ed. (Face-to-face)	-	133	216	525
M.Ed. (Distance Mode)	-	03	09	09
Others	80	122	172	224
Total	1,215	2,491	7,567	11,863

The following points emerge from the above Table:

i) Among all Teacher Education Courses (TECs), a majority comprises of Elementary Teacher Education and B.Ed. programmes.

ii) Except for pre-primary courses, where a marginal decrease was observed from 1995-96 to 2000-01, there has been a steady increase in number of all courses.

iii) The most rapid expansion in number of courses recognized by the NCTE took place from 2000-01 to 2005-06.

iv) In 1995-96, the highest number of courses recognized by the NCTE was for Elementary Teacher Education. Their number was more than double (732) as compared to that of the B.Ed. programme (331), whereas in 2000-01, the B.Ed. programme almost caught up with Elementary Teacher Education course, and in 2005-06, the number of B.Ed. courses was slightly higher than that of Elementary Teacher Education courses and in 2007-08, it may be seen, that the number of Elementary Teacher Education courses is slightly more than that of the B.Ed. courses. It shows that most rapid increase has taken place in the number of B.Ed. courses. However, if one considers the total intake in these two courses, a different picture emerges:

Though, the data for intake in these two courses in not available

Table 2: Annual Intake of ETE and B.Ed. Programmes

Programme	2000-01	2005-06	2007-08
ETE	56,833	1,21,069	2,94,417
B.Ed.	87,693	2,23,476	5,20,432

for 1995-96, it may be safely assumed that intake in B.Ed. till that time was not higher than that in Elementary Teacher Education Programmes, as number of recognized B.Ed. courses was almost half that of ETE courses upto 1995-96 but since 2000-01, the intake in the B.Ed. programme has progressively increased and in the year 2007-08, it exceeded by more than two lakhs. Thus, it can easily be concluded that the rate of expansion is maximum for B.Ed. among all the courses.

v) B.El.Ed. programme was not being offered when NCTE was established. Till 2000-01, only 05 such courses were recognized by NCTE though in 2005-06, the number grew to 12 and grew further to 14 in 2007-08.

vi) The rate of growth of M.Ed. programmes has been maximum during the period 2005-06 to 2007-08. During these two years, the number has gone from 216 to 525 (a 2.4 times increase). It shows that the M.Ed. programme has witnessed increasing demand over the years.

vii) Though there was a 3-time increase in the number of pre-primary courses from 2000-01 to 2005-06, the rate of increase in these courses fell substantially between 2005-06 and 2007-08.

viii) Although there has been an increase in the number of Physical Education courses over the years, the rate of increase was maximum during 2000-01 to 2005-06.

3. Growth of Teacher Education Programmes in Different Regions

It is evident from the situation explained above that since the establishment of NCTE, there has been a tremendous increase in the number of teacher education courses, but the pace is not the same for different courses in the four regions of the country. The growth of Teacher Education Courses recognised by NCTE in different regions is presented in Table 3.

Table 3: Number of Programmes Recognized by NCTE

Region	Number of Programmes			
	1995-96	2000-01	2005-06	2007-08
Northern	153	710	1405	2543
Southern	794	771	2760	4003
Eastern	106	211	363	511
Western	162	799	1777	2716

Following points emerge from the analysis of the data given above:

i) Each region has shown substantial increase in the total number of courses recognized by NCTE over the years.

ii) Southern region has had maximum number of Teacher Education Courses at all points of time whereas the eastern region has had minimum number of such courses.

iii) In 1995-96, the southern region was offering maximum Teacher Education Courses and was far ahead of all other regions in this regard and the other three regions were having nearly same number of courses. But by 2000-01, there was a rapid increase in the number of courses in the northern and the western regions and they almost caught up with the southern region which showed a slight decrease. Although, the number also increased in eastern region, it was far behind other three regions.

iv) By 2005-06, the southern region showed the maximum rate of growth and went far ahead of all other three regions. In the northern and western regions, the number of recognized courses in 2005-06 became double of that in 2000-01 but eastern region showed a much lesser rate of growth during this period. There has been an increase in the number of recognized courses in all the regions but the rate of growth is gradually decreasing.

Region-wise Growth of Different Teacher Education Courses

The growth of Teacher Education Courses in different regions is as presented in Tables 4-7.

Table 4: Northern Region Number of Recognised Programmes

Programme	Number of Institutions offering different programmes			
	1995-96	2000-01	2005-06	2007-08
Pre-Primary	22	14	80	118
Elementary	51	197	401	564
B.El.Ed.	-	5	12	14
Secondary	73	329	1110	1706
M.Ed.	-	68	89	154
Physical Education	-	52	102	184
Others	06	42	44	43

Following points emerge from the above Table:

i) In the northern region, number of B.Ed. courses has always been and still is greater than the number of any other course.

ii) Though Elementary Teacher Education Courses occupy second place after B.Ed., the gap between the two has been widening.

iii) M.Ed. programmes have also shown substantial increase from 2005-06 to 2007-08.

iv) The number Pre-primary Education Courses increased substantially from 2000-01 to 2005-06 but the rate slowed down during 2005-06 to 2007-08.

Table 5: Southern Region Number of Recognised Programmes

Programme	Number of Institutions offering different programmes			
	1995-96	2000-01	2005-06	2007-08
Pre-Primary	36	65	1620	2422
Elementary	732	713	1620	2422
B.El.Ed.	-	-	-	-
Secondary	331	463	1136	1799
M.Ed.	-	59	68	194
Physical Education	-	206	123	152
Others	80	74	105	156

i) The Table reveals that in this region the number of Elementary Teacher Education courses has been greater than that of the B.Ed. courses and the rate of increase is also higher for elementary education courses.

ii) M.Ed. programmes have shown a sharp increase between 2005-06 and 2007-08

iii) Pre-primary education courses showed a considerable increase during 1995-96 to 2000-01 but their number remained almost static since then.

Table 6: Eastern Region Number of Recognized Programmes

Programme	Number of Recognised Institutions offering different programmes			
	1995-96	2000-01	2005-06	2007-08
Pre-Primary	-	-	3	10
Elementary	75	99	188	207
B.El.Ed.	-	-	-	-
Secondary	29	95	161	238
M.Ed.	-	9	17	20
Physical Education	-	1	09	25
Others	-	06	06	06

i) The Table reveals that the region has almost all major Teacher Education Courses, though the number is small as compared to other regions.

ii) Though the number of elementary teacher education courses

and B.Ed. courses both showed a significant increase during 2000-01 to 2005-06, the rate of increase in number of elementary teacher education courses slowed down as compared to B.Ed. courses during 2005-06 to 2007-08.

Table 7: Western Region Number of Recognized Programmes

Programme	Number of Institutions offering different programmes			
	1995-96	2000-01	2005-06	2007-08
Pre-Primary	12	19	46	52
Elementary	71	387	1022	1935
B.El.Ed.	-	-	-	-
Secondary	73	223	861	1287
M.Ed.	-	25	38	151
Physical Education	-	144	218	303
Others	06	-	17	19

The Table reveals that :

i) The number of Elementary Teacher Education courses has remained higher than the number of B.Ed. courses during the period under consideration.

ii) There has been maximum increase during 2000-01 to 2005-06 in all courses.

iii) Significant number of physical education courses are also available in the region.

Growth of Different Teacher Education Courses in Different Regions

Increase in the number of courses recognized at a particular level in different regions is reflected in Tables 8-14.

Table 8: Pre-Primary Teacher Education Programme

Region	Number of Institutions offering Pre-Primary Teacher Education			
	1995-96	2000-01	2005-06	2007-08
Northern	22	14	80	118
Southern	36	65	60	62
Eastern	02	-	03	10
Western	12	19	46	52

i) Northern region has had the highest number of pre-primary teacher education courses among all regions over the entire period under consideration.

ii) The growth rate of pre-primary teacher education courses in southern and western regions considerably reduced after 2005-06.

Table 9: Elementary Teacher Education Programme

Region	Number of Institutions offering ETE Programme			
	1995-96	2000-01	2005-06	2007-08
Northern	51	197	401	564
Southern	732	713	1620	1422
Eastern	75	99	188	207
Western	71	387	1022	1935

Southern region has always been a leader in this category. There has been considerable growth of elementary teacher education courses in western region also, but Northern and Eastern regions lag behind in this sector.

Table 10: Bachelor of Elementary Education (B.El.Ed.)

Region	Number of Institutions offering B.El.Ed. Programme			
	1995-96	2000-01	2005-06	2007-08
Northern	-	5	12	14
Southern	-	-	-	-
Eastern	-	-	-	-
Western	-	-	-	-

Only northern region was offering B.El.Ed. programme till 2007-08.

Table 11: Secondary Teacher Education (B.Ed.)

Region	Number of Institutions offering B.Ed. Programme			
	1995-96	2000-01	2005-06	2007-08
Northern	73	329	1110	1706
Southern	331	463	1136	1799
Eastern	20	95	161	238
Western	73	223	861	1287

i) There were 331 B.Ed. programmes in 1995-96 in the Southern region, whereas there were only 73 such courses in the northern region. The gap between them started reducing since 2000-01

and by 2007-08, the northern region had almost caught up with the southern, which shows that maximum increase in the number of B.Ed. courses has taken place in the northern region.

ii) Eastern region is lagging far behind the other three regions in this category.

Table 12: Master of Education (M.Ed.)

Region	Number of Institutions offering M.Ed. Programme			
	1995-96	2000-01	2005-06	2007-08
North	1	68	89	154
South	-	59	68	194
East	-	9	17	20
West	-	25	38	151

The southern region has shown the highest rate of increase in the number of recognized M.Ed. courses. The northern and western regions also witnessed substantial increase in the number of M.Ed. courses. However, the course has not become popular in the eastern region.

The major increase in the number of M.Ed. courses has taken place during the period 2005-06 to 2007-08.

Table 13: Physical Education Programmes

Physical education teacher education comprises C.P.Ed. and B.P.Ed. courses.

Region	Number of Institutions offering PE Programme			
	1995-96	2000-01	2005-06	2007-08
Northern	-	52	102	182
Southern	-	206	123	152
Eastern	-	01	09	25
Western	-	144	218	303

Till 1995-96, there were no recognized physical education courses in any region. The southern region witnessed a decline in the number of physical education courses during the 2000-01 to 2005-06, whereas all other regions recorded a steady increase over the period under consideration.

The Western region is presently offering the maximum number of physical education courses.

Other Programmes

This category includes special education courses and other courses for specialized teacher preparation in specific areas.

Table 14: Number of Other Programmes

Region	Number of Institutions offering other Programmes			
	1995-96	2000-01	2005-06	2007-08
Northern	06	42	44	43
Southern	80	74	105	156
Eastern	06	06	06	06
Western	06	-	17	19

Till 1995-96, only Southern region was offering these courses and still has the highest number of courses in this category.

The rate of growth of 'other courses' is considerably lower than that of the courses discussed earlier. In the northern and eastern regions their number had remained static since 2000-01. In the western region, the increase in their number during 2005-06 to 2007-08 is nominal, only southern region has recorded a steady increase.

4. Factors Responsible for Growth of Self-Financing Institutions

The analysis of data presented in the previous section reveals unprecedented expansion in teacher education which has primarily taken place in the private sector. There are quite a few paradigm shifts in the socio-political and economic policies at the national level which have facilitated expansion of educational facilities in the private sector. A few factors which have led to the expansion are :

Conducive Climate for Privatization of Education

The era of liberalization, privatization and globalization of economy was ushered in India during the last decade of the 20th Century and it has had an impact on every walk of life and certainly had a great impact on education in general and higher education in particular. The Government of India is also encouraging public-private partnership in education sector and consequently, teacher education could not remain unaffected by this change. Thus, the role of NCTE in regulating the establishment of private teacher education institutions has become significant.

Increased Demand for Teacher Education Institutions

After the establishment of NCTE, there has been a phenomenal increase in the number of teacher education programmes all over the country. Still, the school education sector is unable to meet the demand of

the required number of trained teachers. The fact that a large number of para teachers are being employed, in many states, bear a testimony to this fact. The government and aided sector of teacher education alone was certainly not capable of meeting the increasing demand for trained teachers, which itself has increased manifold due to the enhanced general awareness about education among people and policy directions for the universalization of elementary education.

Restricting the Growth of Correspondence Courses in Teacher Education

Among the first few steps, the NCTE took after its establishment was to put a check on institutions which were providing training to thousands of untrained teachers through correspondence courses. The NCTE, with its mandate of monitoring the quality of teacher education, was rightly not satisfied by the performance of these institutions. Due to the timely decision of NCTE, demand for alternative arrangements to train large number of untrained teachers provided a platform to new players for entry in the field of teacher education and private institutions took full advantage of it.

Near Stagnation in the Growth of Government Institutions

An important factor responsible for the growth of teacher education institutions in the private sector is the reluctance on the part of the state governments to open new institutions or to provide grant-in-aid to the private institutions due to financial constraints. As a result of this policy, the concept of self-financing institutions has entered the system of education in a big way.

Teacher Education: An Attractive Proposition for Private Sector

It goes without saying that private sector works on the simple principle of supply and demand and strives for making maximum profit. The opportunity of making profit was considerably higher in secondary teacher education as compared to the elementary teacher education. The reason for greater interest in opening secondary teacher education institutions as compared to the interest in elementary teacher education institutions is because of its potential for higher returns. It is simply because of this that there has been a greater demand for B.Ed. courses as compared to elementary teacher education courses. It is a recent phenomenon that a demand for elementary teacher education has also considerably increased due to large number of teacher positions available at this level. Thus, private institutions are also entering in a big way in the field of elementary teacher education. The trends available from various Regional Committees of NCTE clearly show that majority of private institutions running B.Ed. programme are now submitting applications seeking approval for starting the Diploma programme in elementary teacher education.

5. Scope for Expansion Across Sectors and Geographical Regions

The sector which needs an immediate attention for the establishment of more teacher education institutions in the country is the sector of pre-primary education. A comparable strength of teacher education programmes in all the three sectors is needed to develop a homogeneous system of education. In fact, the system of teacher education in the country, which is presently top heavy, needs a complete turn around. The number of TEIs in the three sectors, as on 31st March, 2008, is given in Table 15.

Table 15: Institutions of Teacher Education in Different Sectors

Sector of Teacher Education	No. of Institutions
Pre-Primary	242
Primary/Elementary	5,128+
Secondary/Senior Secondary	5,030

Out of 242 programmes of pre-primary teacher education, more than 50% programmes are located in four states, namely, Delhi (37), Gujarat (32), Kerala (30) and Rajasthan (30).

The programme of elementary teacher education also needs strengthening all over the country. The number of ETEIs is greater than the number of STEIs but their intake is much less as the size of basic unit of this programme is 50, whereas it is 100 in the case of secondary teacher education.

In short, both Pre-Primary Teacher Education and Primary Teacher Education need strengthening their growth all over the country in general and in some of the states in particular.

Geographical Regions which need Special Growth of Teacher Education

It is clear that the States of Arunachal Pradesh, Meghalaya, Mizoram, Nagaland and Tripura deserve special attention for opening new teacher education institutions.

6. Future Strategies for Planned and Coordinated Development of Teacher Education

The preceding sections have attempted a statistical perspective of the growth of teacher education in terms of institutions, courses and programmes, enrolments, etc. The picture that has emerged defines the status of teacher education state-wise, region-wise and at the national level with reference to the parameters given above. The information is not adequate to draw informed inferences or even to make future projections of the scenario of teacher education. However, there are certain general principles and concerns which are relevant to suggest strategies for

planned and coordinated development of teacher education in the country. Some such strategies are outlined below.

- Building Consensus Among Different Stakeholders on Issues of Teacher Education

As teacher education is closely linked with the school education, the need for breaking all barriers between schools and teacher education institutions, between school teachers and teacher educators, between regulatory bodies of school system and regulatory bodies of teacher education can hardly be exaggerated for effective implementation of any strategy planned for bringing improvement in teacher education and school education. School education, being on the concurrent list, is the joint responsibility of the States and the Union. The role of State Governments is crucial in the successful implementation of any strategy. For this purpose the following steps may be taken:

a) *Formation of a State Coordination Committee*

A co-ordination committee may be formed consisting of State and NCTE officials to act as a bridge between two bodies. This committee should strive for developing consensus between the two bodies on issues relating to teacher education in the state concerned.

b) *Adopting a flexible approach*

As the needs of different states vary, as far as possible, a flexible approach may be adopted.

- Making Professional Qualification Compulsory for Teachers at all Levels

With the help of the coordination committees, efforts should be made to convince the state governments to desist from the recruitment of untrained teachers. There is also a need for planning effective strategies to provide training to untrained teachers who are already in position.

In order to provide necessary inputs to untrained teachers, serious planning is required. Present method of filling this gap through in-service training is totally inadequate, to say the least. A multi-pronged strategy consisting of –

i) A bridge course of at least 6 months' duration,
ii) Effective in-service training programme,
iii) Effective use of Open and Distance learning mode, and
iv) Preparing learning material

should be adopted. A detailed plan should be prepared so as to provide them all important inputs of pre-service training. The plan should indicate the strategy which could be used for providing a particular input. It should be seen that all of the four elements suggested above are incorporated in planning.

- Special Attention to Pre-Primary Education

As pre-primary education is the weakest link among pre-primary, primary and secondary teacher education, this area needs special attention. As it may not be possible to open as many teacher education institutions immediately as are needed, the infrastructure and human resource available for primary teacher education may be utilized. An effective strategy may be planned for the same on the following lines:

i) Making pre-primary training an integral part of primary teacher education courses.
ii) Designing a bridge course of 3-6 months for trained primary teachers to enable them to teach nursery classes attached to their schools.
iii) Encouraging institutions already running primary teacher education courses to start pre-primary teacher education courses.

- Permitting New Teacher Education Institutions in Unserved Geographical Regions

The strategies outlined above should be made use of for this purpose. If training requirement is made compulsory by the state, the demand for TEIs will increase and agencies for fulfilling the need may come forward.

- Obtaining NOC from States

The condition of No Objection Certificate (NOC) from State must not be relaxed for institutions aspiring to offer a teacher education programme. States should be requested to make periodic appraisals of their needs and issue the certificate accordingly.

- Strengthening Teacher Educators' Training Programmes

The success of teacher education depends on the quality of teacher educators to a great extent. Thus, there is need to strengthen the existing programmes and evolve alternative programmes for the preparation of teacher educators.

- Strengthening Existing Teacher Education Institutions

Effective strategies have to be planned for strengthening existing teacher education institutions including DIETs/CTEs/IASEs which have become non-functional in many states. A detailed plan for the augumentation of human and non-human resources needs to be developed and implemented for these institutions.

In sum, a huge expansion in teacher education institutions has taken place in the country during the last few years and the major contributor to this expansion has been the private sector. In order to reap benefits of the

expansion of TEIs to be monitored from quality point of view and regulated properly, serious attempts have to be made by all the stakeholders to overhaul the teacher education system keeping in view the above suggested strategies.

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Chapter 20

Research in Teacher Education

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CHHAYA GOEL

1. Introduction

Teacher Education is continuously in the state of renewal because school education is changing at a rapid pace and teacher education is called upon to respond appropriately to the changes in school education. Besides, the changing aspirations of people in a fast growing economy, the complexity of the problems and the wish for healthy living call for revitalization of institutions of learning in general and teacher education in particular. Despite efforts made by some of the apex organizations in this direction, there is need to provide additional policy inputs and operational guidance in areas of research, development, extension and capacity building with a view to further revitalizing teacher education leading to preparation of teachers capable of fulfilling the aspirations of emerging knowledge society in India.

The number of teacher education institutions has multiplied over years as new teacher education institutions, largely private, have come up. Before the establishment of NCTE, India had about 1,500 teacher education institutions. But their number has now exceeded 15,000 due to lack of manpower planning on the part of State Governments which do not have data with respect to teacher education institutions they need to meet the requirement of additional teachers. In such a state, fresh applications for new teacher education institutions keep pouring in which are processed on the basis of proposed inputs alone.

Reforms and innovations have to be based upon a proper understanding of the factual position and a clear perception of future requirements. Research, which is essentially the collection, analysis and interpretation of information should logically have an important part to play in decision making relating to reforms. The present paper attempts to build a research base for reforms in Teacher Education.

2. Research Scenario in Teacher Education in India

Research scenario in Teacher Education in India is differentiated into various areas as follows:

Teacher Education Institutions : Establishment and Enrolment

There are few studies relating to establishment of TEIs and enrolment therein vis-à-vis demand of teachers in the school system. But, at the face of it, it is evident that there are wide gaps between outputs of TEIs and the capacity of the systems to absorb the product. The establishment in an appreciable number of programmes has already overgrown the Enrolment of Learners in various States, namely, Maharashtra (D.Ed. & B.Ed.), Gujarat, (D.Ed.), Kerala (B.Ed.), Haryana, (D.Ed./JBT), Andhra Pradesh ("Pandit Prashikshan Pathyakram"). There is a need to find out the number of teacher education institutions required countrywide, Programme-wise and State-wise, at present, and in future. Surveys need to be conducted to find out the present status and requirement of teachers. The projections ought to be in tune with the growth of school education. Also, futurological studies need to be conducted to make forecasts about teacher education.

In the context of "Sarva Shiksha Abhiyan" in respect of elementary education, universalization of secondary education and further strengthening of higher secondary education, the teacher education needs to be strengthened. Every State should be asked by the NCTE to conduct surveys and submit the estimates within stipulated time. Blanket YES/NO by the State Governments for teacher education programmes not supported by up-to-date data and future forecasts could lead to further chaos.

Profiles of Trustees, Teacher Educators and Pupil Teachers

Nobody with "Profit Motive" should be entrusted the task of preparing teachers. A large number of Trusts observe little professional ethics. There are mechanistic norms, criteria and mechanisms governing the induction of Trusts, teacher educators and pupil teachers. Norms for examining the proposals for Teacher Education Programmes are wanting. Criteria for admission into various teacher education programmes, namely, NTT, D.Ed., B.Ed., M.Ed., C.P.Ed., B.P.Ed., M.P.Ed. are arbitrary in most of the cases. There are wide gaps between the expected and practiced attitudes of the Trustees. There are wide gaps between the teaching attitude and teaching aptitude of the teacher educators as well as pupil teachers.

Education discipline demands trustworthy Trustees and dedicated teachers. How to search and re-search for them? The criteria for admission into various teacher education programmes need to be worked out very carefully. For example, the Regression Equation for the Prediction of Educational Competency could be as follows:

$Y = B1X1 + B2X2 + B3X3 + B4X4 + B5X5 + \ldots\ldots\ldots + BnXn + C$

Where

X1 is Content Ability

X2 is Language Ability

X3 is Teaching Aptitude

X4 is General Mental Ability

X5 is Social Sensitivity

Xn is nth factor contributing to

Y the Educational Competency and

B1, B2, B3.....Bn are the relative weightages of the factors, and

C is the contribution due to other factors.

Regression equations could be employed for admission into teacher education programmes. Admission into Master of Education programme could be on the basis educational profile, techno-pedagogic skills, lifeskills, management competencies, communication competencies and research aptitude of the candidates.

Some research studies have been conducted to this effect. Out of the four independent variables, Teaching Aptitude, Language Ability, General Mental Ability and Social Sensitivity, teaching aptitude and language ability have been found to be contributing most to Educational Competency. Social sensitivity and general mental ability have been found to contribute next in the order (Mishra Renu, 1993, DAVV, Indore). The performance at the first graduation/postgraduation level may not ensure competency at B.Ed. and M.Ed. levels. So, admission criteria for educational programmes should be inclusive of the status of candidates on Teaching Aptitude and Attitude, Educational Aptitude and Attitude respectively (Goel, D.R.; Goel Chhaya; Patel, Sonal, 2001, MSU, Baroda). The correlation between M.Ed. Educational Profile percentage scores and B.Ed. percentage scores has been found to be 0.25. The coefficient of determination is 6.25%. It means the variation in the M.Ed. Educational Profile scores can be explained through the B.Ed. percentage scores to the tune of 6.25%. The 92.75% of the variation remains unexplained (Goel D.R., Goel, Chhaya, 2007, MSU, Baroda). The above studies suggest that there is a need to evolve suitable criteria for admission into teacher education programmes.

Philosophical Foundations

A number of studies have been conducted during the recent past on educational implications of the Sikh Gurus' Bani (Jasbir Kaur, 1998, Guru Nanak Dev University, Amritsar, Gurpal Singh, 1999, Punjabi University, Patiala), Educational Philosophy of the Sikh Gurus (D.N. Khosla, Meerut University, 1983), Bhagvad Geeta (Subhash Chandra Panda, 2004, Berhampur University, Berhampur; Sunita Singh, 2006, Dr. Ram Manohar Lohiya, University, Faizabad), Gramgeetha (Shobhna Purushottam Saoji,

2006, Sant Gadge Baba Amravati Vidyapeeth, Amravat), and Hermann Hesse's Philosophy (Alka Mecwan, 2008, S.P. University, Vallabh Vidyanagar) and other philosophers.

Doctoral studies have been conducted in India also on Sankhay Philosophy, Life and Work of Dr. Babasaheb Ambedkar, Sakhi of Sant Kabir, educational ideas of Pandit Deen Dayal Upadhyaya and Madan Mohan Malviya, Philosophy of Mahatama Gandhi, Dev Atma, Gurudev Tagore, Teachings of Bhisma in Mahabharta, Gautam Buddha, Shri Panduranga Shashtri, Upanishad, Osho of Rajnish, Sir Sayed Ahmed Khan, Yoga Vashishtha, Dr. S. Radhakrishnan, Shri Pandurang Athavle, Swami Vivekanand and Shri Aurobindo Ghosh, Ramakrishna Mission, Vinobabhave, Mahatama Jyotirao Phule, Chatrapati Sahu Maharaj of Kolhapur, Motibhai Amin, Maganbhai P. Desai, Guru Nanakdev Ji and Martin and Vedantic Model of Swami Rama Tirtha.

Guru Arjun Dev visualised 'Guru' as the pivot who can lead his disciples on the path of reality. His educational thoughts are deeply rooted in Indian tradition to acquire self-realization and self-manifestation. Truth, love, beauty and bliss are the four paths leading spiritual education. He advocated absolute purity, absolute love, absolute honesty and absolute unselfishness as the four pillars of international understanding. Guruji advocated that evaluation is not the monopoly of the teachers alone as children also evaluate their own work themselves.

Basically, the Sikh Gurus were idealists and their philosophy comes under the umbrella of idealism. But their understanding of the problems and their solutions were realistic and practical. They always worked out solutions in the context of their social, cultural, ethical, moral, political and economic nature. Sikhism is basically a relationship of Guru (Teacher) and Sikh (Shishya). Thus, their philosophy of life has great relevance with respect to philosophy of education. The concepts put forth by Sikh Gurus with special reference to aims of education, curriculum, pedagogy, teacher, pupil, discipline and teacher pupil relationship are not merely theories but involve practical wisdom. The axiology of Sikh Gurus emphasizes on value oriented education, which is the main construct of individual's character. The trio of their value system is 'Nam Japna', 'Vand Chhakna' and Kirt Karna'. The metaphysics of Sikh Gurus involves the root of reality. What is true is real and what is real is true. They suggest an honest life with complete faith in Him. Sikh Gurus, being great moral and spiritual teachers, emphasized the cultivation of intellectual, aesthetic, moral and spiritual values in life. In the views of Sikh Gurus, it is essential that there should be overall development of man encompassing mental, intellectual, moral and spiritual horizons.

For a self-realized soul, the entire cosmos is a manifestation of God. There is nothing more purifying on earth than knowledge. The mundane man should go through Bhagvata Gita to liberate the self from Maya. Humanism is one of the important virtues of divine life. The Platonic soul-to-soul love is the real love. The educational and philosophical implications

of Bhagvad Gita are – the status of Guru is higher than that of God. A teacher with sound personality and super character is the only ideal. The teacher is a 'Jyot 'and 'Jyotsana' which enlightens the little ones. Maharishi Ved Vyas provided divine power of sight to Sanjay. It flags a message that a teacher should provide insight to his pupils to awaken their conscience, so that they are in a position to discriminate between 'Paap and Punya', good and evil. Every teacher should be a Friend, Philosopher and Guide for his learners as Gita depicts through the association of Lord Krishna and Arjuna. The objectives of education and learning need to be designed in the light of Parigrah and Nigrah. Lord Krishna led the war not for the realization of his selfish objectives, but for public welfare. The teachings of Gita are not for Arjuna only, but for all times and all generations. Gita teaches control of senses through which one can liberate oneself of Maya or illusion. Strong determination and faith are the keys to success. Karma with Bhakti has wonderful returns.

Scientific attitude, gender equality, national integration, respect for all religions, cleanliness, humility, sensitivity, punctuality, dignity of labour, patriotism are some of the values identified and confirmed from preaching of Gramgeetha. The text of the National Saint Tukdoji Maharaj in the form of Gramgeetha is its own testimony, for example, "Aggyananech Duravtey Pragati", "Dhan He Gribanche Rakt", "Shram Hi Gavachi Daulat", "Desh Dukhi Jnu Mazhechi Shareer".

Hermann Hesse's philosophy focuses on 'be', 'becoming', 'being' and then 'de-becoming'.

The eclectic philosophy of all the Philosophers should be the foundation of Education. How can Philosophical foundations be strengthened? "National Education Day" is observed on 11th November to celebrate the Birthday of Maulana Abul Kalam Azad, the first union Education Minister of Independent India. Let all of us ask a basic question to ourselves as to what extent have we been able to emancipate ourselves from caste, creed, religion, region, relation in this secular State of India? To what extent have we succeeded to have democratic socialistic dialogues? To what extent have we integrated naturalism of Gurudev Rabindranath Tagore to realize the liberty of learner? Where does the 'Viveka' of Swami Vivekanada flow through our Education? Where is the Statesman and Educational Philosopher of the class of Dr. S. Radhakrishnan to enlighten us? Let us search and re-search.

Historical Foundations of Teacher Education

From "Escola Normal" during the Portuguese Goa (1841-1961) to the proposal for e-Teacher Education (2008), India is a witness to a large variety of teacher education programmes. The credibility of classical teacher education model is fully established. The land, area, location, institutional plant, environment, objectives, curricula, learning resources, modes of transaction, evaluation modes and mechanisms, placement,

renewal are talked of even today. But, there are question marks on the present day teacher education. Distance education has done the alarming harm to teacher education, being most deployed and diluted and the least professional. Commercialization is a big threat to most of the traditional teacher education colleges. None of the innovations in teacher education, such as Longer Duration Teacher Education, Integrated Teacher Education, Personalized Teacher Education, Specialized Teacher Education could be institutionalized further. Either these have faded or are limited to the places wherefrom these originated.

Research studies on the historical perspective of teacher education are rare.

The benefits of decentralization and autonomy were well demonstrated by Escola Normal (Richard Cabral, 2007, Pune University, Pune). A study has been reported on the origin and development of Ancient Indian Universities (Amar Singh, 2008, Dr. R.M.L. Avadh University). The Ancient Indian Universities, namely, Takshshila, Nalanda, Vikramshila, Vallabhi, Odantpuri, Jagdalpur, Kashi, Kashmir, Mithila, Nadia, Dhara and Kannauj have a lot to offer regarding the profiles of Acharyas, attributes and dedication of learners, curricula, modes of transaction, examination and evaluation. The autonomy of education and decentralization of management were remarkable. The expertise and character of each Acharya was a focus of attention for students from far and wide. The profiles of the Dwar-Pandits and Top Administrators of the Universities are still on Records. Each Ancient Indian University was unique in specialization. It was an honour to be the scholars of these universities. Each word spoken by the scholars was establishing the testimony of the text. Excavating the history, even the remains have a lot to offer to the present day teacher education.

Studies have been reported on the Progress of Primary Education in Amritsar District after NPE 1986, and Aligarh District post-independence, development of post-basic education in Gujarat, development of higher education in Manipur and UP post-independence, history of Pre-Service Training of Secondary Teachers in Maharashtra State, and In-service Teacher Education in Punjab from 1947-1990, History and Development of Nair Service Society as a voluntary Educational Agency in Kerala and Educational Thoughts of Maharaja Chatur Singh of Mewar (1880-1929).

Sociological and Psychological Foundations of Teacher Education

In this age of nuclear families, the focus on pre-primary education has become prominent. The studies on pre-primary teacher education are rare. We are struggling with the problem of first transition from home to pre-school in the case of 3-year old child. Scenario of the mental state of the child, parents, teachers and the support staff needs no demonstration. On the other hand, we have "Anashrit Ashrams" for the old. There are problems of universalization of primary education, population

education, adolescent education, higher secondary education and medium of instruction. English language as a medium of instruction seems to be our biggest problem. There are gaps between teaching styles and learning styles. There are also problems of teacher burn-out and rust-out, degeneration of values and institutions, teacher absence and para teachers. Stress, strain, anxiety, tension, psycho-neuroticism are on the increase. There are problems of education with mental as well as physical burden. There are problems of value conflicts and value clashes. Inspite of the pious hope of all-round development of personality through holistic education, our society is turning from naturalistic, idealistic, and humanistic to existentialistic and pragmatist. It has been found out higher the administrative power one has, lower are the affect attributes. Social and psychological abuse is on the increase. Value discussion models, Value analysis models, Value clarification models and Jurisprudential models have not been employed rigorously. Some studies on Applied Psychology have been found to have desirable results in various areas of Guidance and Counselling. Attempts have been made to address learning difficulties, learning disabilities, psycho-neuroticism, problems of stress, strain, burn-out, deviant behaviour. Though the effectiveness is evident in some cases, the efficacy needs to be scientifically studied further.

There are wide gaps between school education and teacher education. All of us are for child/learner-centered education. But even when we know that children develop their own theories, we go on super-imposing our models on them. There are wide differences between the laboratory conditions of teacher education institutions and the field conditions. The training needs perceived by most of the educational administrators and headmasters are related to maintaining appropriate human relations, stress management, conflict resolution and group dynamics. Students are in need of emotionally supportive teachers. Democratic environment is needed than authority and suppression. Studies on psycho-social factors of adjustment of school teachers gave a message to policy makers and administrators that all attempts should be made for compatible placement of teachers in the context of their work place and conditions. The high professionally committed teachers have been found to have high occupational stress as compared to low professionally committed teachers. High professionally committed teachers have been found to have high job satisfaction. Researches have demonstrated the effectiveness of various models of teaching such as CAM, ITM, and AOM. Education programmes for enhancing emotional intelligence of student teachers have been found to be successful in terms of raising the EQ levels.

There are questions on teacher moral, there are problems of organizational behaviour and organizational development. There are unhealthy staff constellations. There are challenges of organizational climate development. Teachers need knowledge base of child psychology, adolescent psychology and adult psychology. Behavioural problems are

on the increase. There is lack of clashes. There are rare suitable inputs for the marginal groups. In this age of fast modernization, there are problems of acculturation. How to realize equity, equality and excellence at the same time? The problems mentioned above, if investigated properly, shall build a comprehensive knowledge base of teachers and of teacher education.

Economics of Education

S. Mullick (SNDT, 2005) conducted a Study of Institutional Effectiveness of the Colleges of Education in relation to the Cost of Teacher Education. D.R. Sharma (SPU, 1994) conducted a comparative study of expenses of the Educational Institutions of Secondary Education of Rural and Urban Areas of Mehsana District and their implications for Pupils' Achievement. S. Mehta (Vikram University, 1996) conducted a case study of Ujjain district in terms of Educational Progress and Economic Development. P.P. Punjal (Shivaji University, 2000) conducted a comparative study on Economics of Physical Education and Sports of Maharashtra and Punjab. Y.R.B. Sharma (Osmania University, 2002) conducted a study on Investment on Education of Scheduled Caste Self-Employed Persons in twin cities of Hyderabad and Secunderabad. The NAAC also studies per capita investment on teacher education programmes offered by the institutions of higher education.

3. Teacher Education Parameters

Field Expectance and Relevance

Doctoral studies have been reported on the Field Expectance and Field Relevance of Teacher Education Programme (S. Mann, G. Shukla, Banasthali Vidyapith, 2005), Teaching Competencies Expected and Practiced (Jyoti Bawane, University of Mysore, 2001). The studies found wide gaps between the Expectations and Practices.

Job Satisfaction of Teachers and Performance

Number of studies have been conducted on Job Satisfaction of Teachers and their teaching performance and effectiveness (Dharmendra Malik, MDU, 2005; J.Kaur, KUK, 2004; K. Venketeshwara Rao, Shri Venketeshwara University, 2002; I.V.R. Reddy, Andhra University, 2001). Job satisfaction has also been studied with respect to Freezingness amongst teacher educators (M. Kumari, Gorakhpur University, 2005), values and attitudes towards teaching and teacher effectiveness (G. Singh, Punjab University, 2002). M. Verma (DAVV, 2002) conducted a study of job satisfaction of teachers in relation to Job Stressors, Role Commitment, Vocational Maturity and Social Intelligence. M.L. Sharma (PU, 2002) conducted a comparative study of Job Stress, Job Satisfaction and Adjustment of College Physical Education Teachers of Himachal

Pradesh, Punjab and Union Territory Chandigarh. Studies have been reported on Job Satisfaction, Professional and Educational Interest, Creativity, Attitude Towards Teaching of Teacher Educators at different Levels of Teacher Education (M. Kaur, PU, 2001). V.P. Pal (PU, 2001) conducted a study of Job Stress, Job Satisfaction, Adjustment of Physical Education Teachers in relation to their job placement. S. Khlai-UM (PU, 1999) conducted a study on Job Satisfaction and Job Dissatisfaction of dual factor theory in relation to personality types and self-concept of secondary school teachers of Thailand. A Mary Lily Pushpam (Bharthiar University, 1997) conducted a study on Attitude towards Teaching Profession and Job satisfaction of Women Teachers in Coimbatore. P.R. Manjula (Bhartihar University, 1995) has done an intervention into the job satisfaction of Higher Secondary School Teachers of the Coimbator district of Tamil Nadu State. A Hamid (MDU, 2002) conducted a study of the Accountability of Secondary School Teachers in relation to their Job Satisfaction and Morale. B. Shrivastava (University of Lucknow, 2002) conducted a study of Mental Health, Values and Job Satisfaction among teachers of Hindi and English Medium Schools. The findings of these studies have confirmed that teachers have problems of mental health, job satisfaction and job stress.

Influence of Psycho-Social Factors on Teaching

Studies have been conducted on the influence of certain Psycho-Social Factors in Scholastic Achievement of B.Ed. Students (C. Manchala, Shri Venketeshwra University, 2005). S.S. Chahar (MDU, 2005) has conducted a study of teaching competency of student teachers in relation to certain non-cognitive variables. S. Shaik (Shri Venkateshwara University, 2004) conducted a study of Academic Achievement and Prevalent Values of DIET students in Andhra Pradesh. K. Joshi (Gujarat Vidyapith, 2003) conducted a study on the Teaching Aptitude of Higher Secondary School Teachers of Gujarat State in the context of some Psycho-Social variables. N. Bhargava (Bundelkhand University, 2003) conducted a study of personality characteristics, values and SES of Pupil Teachers in relation to their attitude towards social change. G.P. Raval (Saurashtra University, 2003) conducted a study on Approaches of coping with Stress factors and Teacher Performance. A Study was conducted on Social Intelligence and Teacher Effectiveness (R. Agrawal, Bundelkhand University, 2003). V. Goswami (Banasthali Vidyapith, 2003) conducted a study on Effect of Participatory Teacher Education Programmes on the Conceptual Development and Self-Development of Student Teachers. G. Pareek (PU, 2003) conducted a study on the Effect of Relaxation Technique on Job Stress in relation to Blood Pressure, Hypertension and Heart Rate in Women Teachers. M.S. Chonakwar (Dr. B.R. Ambedkar University, 2002) conducted a study

of personality characteristics of scheduled caste and non-scheduled caste primary teachers in relation to their classroom adjustment attitude towards teaching. K.K Tripathy (PU, 2002) conducted a study of Role Structure and Role Stress in relation to Work Satisfaction of Primary School Female Teachers in Orissa. Y.K. Anand (PU, 2002) conducted a study of Role Efficiency of Polytechnic Teachers and its relationship with personal and organizational characteristics. K.D. Patil (SNDT Women's University, 2002) conducted a study of Teacher Performance of Junior College Teachers in relation to some Personality Dimensions. R. Balu (SNDTWU, 2001) conducted a study of the role performance of teacher educators in Relation to their Profile. M. Pal (PU, 2001) conducted a comparative study of Attitude of School and College Teachers towards Creative Learning and Teaching in relation to Mental Health. A. Khaleque (PU, 2001) conducted a study of Burn-out in relation to Self-Concept and Introversion-Extraversion among Elementary School Teachers in Assam. R.Rao (MSU, 2001) conducted a study leading to the development of an In-Service Training Programme for Navodaya Vidyalaya Teachers for Meeting Students Emotional Needs. K.S. Shakunthala (Bangalore University, 2001) conducted a study of the adjustment of Secondary School Teachers in relation to their Teaching Competency, Emotional Maturity and Mental Health. J. Kaur (PU, 2001) studied mental health as related to Vocational Maturity of male and female prospective secondary school teachers. G. Yadagiri (Osmania University, 2000) conducted a comparative study of professional attitudes and teacher effectiveness among Physical Science teachers of Ranga Reddy and Medak districts of Andhra Pradesh. A.H. Kulkarni (Shivaji University, 2000) conducted a comparative study of male and female secondary school teachers with respect to their personality traits, competency and teaching effectiveness.

Attitude Towards Teaching

S.K. Gupta (Baraktullah University, 2000) compared creative and non-creative secondary school pupil teachers of Madhya Pradesh in relation to values, adjustment and attitudes towards teaching. D.T. Reddy (Mysore University, 2000) conducted a Critical Study of the Professional Pleasure in relation to Creativity and Change Proneness among secondary school teachers. D. Baland (MDU, 1999) investigated the Study Habits, Reading Interest, Attitude towards Teaching and their bearing upon the achievement of the pre-service teachers. S. Patanrasd (SPU, 1998) conducted a study of the Attitude of student teachers towards the teaching profession and globalization with reference to certain variables. A.M. Reddy (Osmania University, 1997) conducted a study of the attitudinal changes among the pre-service teacher trainees towards the teaching profession. The studies

have confirmed that attitudinal changes do occur towards the teaching profession through pre-service teacher education. Creativity and change proneness definitely contribute to professional pleasure.

Classroom Teaching Effectiveness

S. Chawla (MDU, 2005) conducted a study on Interactional Analysis of Classroom Behaviour of Effective and Ineffective Hindi teachers. R. Pareek (Banasthaly Vidyapith, 2005) conducted an analytical study of Computer Curriculum in teacher education programme. S. Singh (MDU, 2005) studied the effect of Classroom Questioning Behaviour Training on Teaching Competence of student teachers and their Self-Concept. V. Upadhyaya (Dr. B.R. Ambedkar University, 2005) conducted a comparative study of the impact of the Teachers' Training on Self-Concept, Attitude Towards Teaching and Values in Self-Financing and Government Aided Institutions. P. Mishra (KUK, 2004) conducted a comparative study of classroom verbal behaviour of Student Teachers and In-Service Science Teachers of Secondary Schools. V. Singh (University of Lucknow, 2004) studied the effect of B.Ed. Training Programme on Teaching Competency of Pupil Teachers. L.K.M. Baburao (Andhra University, 2003) conducted a study of DIETs, CTEs and IASEs with special reference to NPE 1986. S.P. Shukla (Gujarat Vidyapith, 2003) studied the effectiveness of Video Programmes with Discussion, without Discussion and Traditional Methods on the Achievement of Student Teachers in relation to certain variables. Padmini P. Rani (Avinashilingam Deemed University, 2003) developed oral communication efficiency in English B.Ed. trainees. R. Chandra (PU, 2002) focused on sustainable changes relevant to community and school needs in curricular input and transactional modes of elementary teacher education. A study on the effect of the learning inputs provided in Teacher Education Programme on Teaching Efficiency of Teachers was conducted by A. Goel (Banasthali Vidyapith, 2002). V. Vohra (KUK, 2002) proposed a Training Model after identifying training needs of Secondary School Language Teachers. K Jayaramanna (Andhra University, 2001) conducted a study of teacher effectiveness in relation to work orientation and achievement of students at Primary Level. S. Devi (MDU, 2001) studied the effect of Classroom Questioning Behaviour Training using Games on Teaching Competence and Pupils' Achievement. J.K. Suhag (MDU, 2001) conducted Interactional Analysis of Classroom Behaviour of Effective and Ineffective History Teachers. M.S. Bhatt (Gujarat Vidyapith, 2001) conducted a study on Primary Teacher Trainees' Perceptions of Teaching. R. Balu (SNDT, 2001) conducted a study of Role Performance of Teacher Educators in relation to their Profile. M. Singh (Dr. B.R. Ambedkar University, 2000) conducted a study on Identification and Comparison of Language Skills for Hindi and English Teachers of Secondary

School Level. D.T. Reddy (University of Mysore, 2000) conducted a critical study of Professional Pleasure in relation to Creativity and Change Proneness among secondary school teachers. S. Kher (DAVV, 1999) conducted a case study of Need Based Programmes for Pre-Primary Teacher Education. A.K. Shrivastava (Dr. B.R. Ambedkar University, 1999) conducted a comparative study of the effect of training on Teaching Attitude and Self-Concept of various types of trainees under DIET programme. Baiju K. Nath (University of Calicut, 1998) developed self-instructional package for secondary school Biology teachers for their In-service Learning. H.B. Jani (Bhavnagar University, 1998) studied Secondary teacher trainees' Perceptions of teaching. Mamta (Shri Shahuji Maharaj University, 1998) explored factors of specific training needs of lady teachers in primary schools. U. Sharma (MLS University, 1993) conducted a study aimed at Crystallization of Professional Values among the teachers of higher secondary Schools in Rajasthan.

Predictors of Teaching Proficiency

G Londhe (Pune University, 2003) studied the Teaching Aptitude of Student Teachers with reference to Creativity and Teaching Competency. C. Shekhar (Bundelkhand University, 2002) conducted a Study of the Locus of Control of Pupil Teachers Admitted on Weightage of Bundelkhand University in Relation to their Future Teaching Effectiveness. D. Baland (MDU, 1999) investigated the Study Habits, Reading Interests, Attitude towards teaching and their bearing upon the Achievement of the Pre-Service teachers. N. Kumari (PU, 1999) conducted a study of Entrance Tests and Measurement Performance of B.Ed. trainees as related to Psychological and Socio-Demographic variables. D.K. Diwan (MDU, 1993) conducted a study of the predictors of Academic Achievement of student teachers in terms of Aptitude, Attitude, Participation and Human Values. All these studies have contributed to the knowledge base of teacher education significantly, but, there is a need to work out systematically the admission criteria into various teacher education programmes.

Organizational Climate and Teaching

S. Awasthi (Bundelkhand University, 2002) studied Teacher Alienation, their Morale and Principal's Leadership and Institutional Effectiveness in different Intermediate Colleges on the basis of Organizational Climate. A. Day (Bundelkhand University, 2000) studied the Teachers' Professional Values, Family Relationship and Anxiety in relation to Organizational Climate. R.M. Ghatel (SNDT, 1999) studied Performance and Job Satisfaction of Teachers in relation to their Maturity, Locus of Control and Organizational Conflict. N. Singh (Jai Narayan Unuiversity, 1999) conducted a study of Senior Secondary Schools of Jodhpur Division in terms of Organizational Health and

Teachers' Attitude towards Teaching Profession and Adjustment. All these studies have confirmed that Healthy Organizational Climate for Effective Education is essentially required.

4. Innovative Inputs

Innovations in Teacher Education

Teacher Education has experienced Micro-Teaching, Model-Teaching and Techno-Pedagogy. The innovation of Micro-Teaching has been institutionalized across India, Model-Teaching appeared and disappeared at demonstration level, whereas Techno-pedagogy is in infancy. Personalized Teacher Education appeared in one form or the other (DAVV, Indore, Banasthali, Lucknow University). A large number of visitors appreciated these Personalized Teacher Education Programmes, but none adopted them in their institutions. Participatory Approaches to Problem Solving have been effectively demonstrated in classrooms.

Attempts have been made by the Intel 'Teach to the Future' in integrating ICT in Teacher Education at pre-service and in-service levels. Intel has been organizing training programmes to orient the pre-service and in-service teachers with sizeable inputs of ICT.

The Regional Institutes of Education of the NCERT have been offering B.A./B.Sc./B.Ed. and M.A./M.Sc./Ed. integrated programmes of Teacher Education. Also, the RIEs have been offering two-year integrated B.Ed. Programme. The University of Delhi has been offering 4 year integrated programme (B.El.Ed) for the preparation of elementary teachers. A 2-year PG Diploma in Educational Technology proposed by one of the PG Departments of Teacher Education in India and a two-year integrated M.Ed. Programme have been approved. Modular integrated Teacher Education Programmes for Higher Education, and e-Teacher Education Programmes have been formulated by some of the institutions. A number of Innovations have been attempted in Evaluation such as Choice Based Credit System, Electronic Distribution of Examination Papers (EDEP), On Demand Testing, Automated Testing, Double Valuation, Testing of Affect Attributes have been attempted. Progressively, there is a shift to total Internal evaluation based Semester System. Such innovative practices in evaluation are being progressively integrated in teacher education curricula.

ET and ICT in Education

A sizeable number of studies on effectiveness of CAI developed through various computer languages, employing either pre-experimental design or quasi experimental design have revealed significant mean score gain from pre-test to post-test. Studies on the effectiveness of CAI reveal favourable reactions of students and teachers towards the CAI. (Prabhakar 1989; Himani 1990, Mahapatra 1991, and Adhikari 1992, DAVV, Indore; Khiwadkar 1999, Zyoud 1999, Yadav 2000, Goel Khirwadkar Tomar Das

& Joshi, 2000, Macwana 2004, Sharma 2005, Barot 2005, Pradesi 2005, and Rathod 2005, MSU; Suwanna 2004, SGU; Upadhyaya 1999, MJP Rohilkhand University, Bareily; Sanjana 2001, MDU and Pandian 2004, DU)

The studies on the pedagogic/techno-pedagogic analysis of the computer based educational instructional programmes are not too many. These studies reveal that there should be added focus on production variables, pedagogic principles and spatial and temporal contiguity of various message forms (Patel, 2001,MSU; Chaudhari, 2005, MSU). The studies have further revealed that computer as a medium has the potential to address the heterogeneity in terms of variables, namely, IQ, Interest, Motivation, Language level (Zyoud, 1999, MSU).

There are few studies on effectiveness of CALM in various modes, namely, text, graphics, text and graphics, text, graphics and music. It has been found that the composite modes may not always ensure higher level of language learning (Das, 1998, MSU). Very few studies have been conducted on the relative effectiveness of CAI with peer interaction in mono, diad and triad (Pardesi,2005, MSU).

Attempts have been made for designing, developing and implementing Computer-based Learning Resources Management System (LRMS). The automated LRMS has been found definitely more effective than the manual LRMS (Beryah, 1995, DAVV). A few studies have been conducted on the relative predictivity of various variables with respect to the criterion variable, namely, Educational Proficiency (Mishra, 1993, DAVV; Goel, 2003, MSU). A study conducted on Time Space Personnel Management System revealed that the computer-based TSPM system found relatively more acceptable and better functional than the manual TSPMS (Biswal, 1995, DAVV).

Though studies have been conducted on the automation of examination system, yet these studies seldom find expression at the functional level. Teacher Education Institutions need to promote Choice Based Credit System and on demand examination (Mahajan, 1993, DAVV; Joseph, 1993, DAVV; Shinde, 1993, DAVV; Goel, 1997, MSU).

A sizeable number of teacher education institutions in India have initiated ICT in Education either as a core course or as an optional course. Inspite of the impeding factors, namely, limited staff, inadequate laboratories with maintenance problems, sizeable classes, the courses have been found to realize their objectives reasonably (Goel, Das, and Shelat, 2003, MSU). A sizeable number of teacher education institutions have been found lacking facilities such as Internet, MS Publisher, Acrobat Reader (Goel, 2005, MSU). A few studies conducted on the use of Internet in Teacher Education Institutions revealed that the student teachers largely lack in info-savvy skills and techno-pedagogic skills (Joshi, 1999, MSU; Dhodi, 2005, MSU).

Some of the teacher trainees make use of Internet for surfing, e-mail, research, core courses, special areas. But, the Internet is rarely

used for web designing, reflective dialogue and outsourcing. Measures of Internet safety are rarely employed. There is a need to develop Net-Savvy Skills in Teacher Educator Trainees (Goel, 2006, MSU). Some studies have been conducted on bridging the gaps between teaching styles and learning styles. The studies are appreciable but there is a need to conduct many more studies (Rathod, 2005, MSU). Studies conducted on language instruction through Power Point Presentations on realizing communicative and functional languages have found that such presentation are indeed effective tools of learning various languages (Yadav, 2005, MSU; Rathod, 2005, MSU). There have been very few studies on developing language learning strategies and learner autonomy through weblogs. Blogs not only provide teachers with an exciting new way to approach communicative language learning, these also give students a new reason to enjoy reading and writing. Educational Technology and ICT in Education have demonstrated their values. But, Technology in Education is not yet fully integrated. Technology in Education is still under-utilized.

Language Learning

The Communicative Interactive Constructive Approach has been found more effective than Structural Approach, whereas Structural Approach has been found to be more effective than Grammar Translation Approach. The media supported approaches have been found to be more effective than traditional conventional approach. Multi-lingual model of language instruction has been found to be more effective than Monolingual Model. Media Language Proficiency has been found to facilitate learning a great deal.

Teaching Methods

A study on development of science education in Nagaland concluded that more than half the total number of the science teachers (57%) were of the opinion that objectives of science education were not clear to them which resulted in less achievement of objectives of science education (Khriesamhalie Pienyu, 2004, Kohima). A study on the Science curriculum transaction in secondary schools of Baroda city revealed that teachers are not clear about values of Science (P.S. Umashree, 1999, MSU). Student teachers are found to be more interested in using innovative methods of teaching the language than working teachers. English language teaching at school level is found to be suffering from lack of interest and attitude (Kshamata Chaudhary, 2002, VMOU). Use of inductive thinking model to teach Science at Primary level proved fruitful in developing the reasoning ability of students(Kishor Kumar K. Leuva, 2002, VNSGU).

Educational Evaluation

A study on evaluation of mathematics textbooks of V, VI, VII standards revealed that there is absence of continuity in chapters and lack of activity

oriented exercises (Jayshree R. Pai, 1997, MSU). Various studies under the section Educational Evaluation focused on remedial programmes (Archana Srivastava, 2004, Vikram University, Ujjain), system of performance appraisal for teachers (Mohammad Abbas Ali, 2003, University of Mumbai, Mumbai), continuous and comprehensive evaluation (Puspanjali Pani, 2004, Utkal University, Bhubaneswar) and evaluation of teachers by students (Shrirang Baburao Kshirsagar, 2006, Pune University, Pune). Remedial programmes developed to improve achievement have been found to be effective in bringing the results. Both B.Ed. Students and B.Ed. Teachers are of the opinion that students' evaluation of the teachers should be there, if taken positively and constructively.

N.S. Rathod (Bhavnagar University, 1993) conducted a study on Application of Item Response Theory to Criterion Referenced Testing. J.A. Ramanuj (Bhavnagar University, 1997) conducted a study on development and standardization of Criterion Referenced Mastery Test on Surface Tension, Capillary Action and Viscosity in the subject of science in Gujarati. Teacher Education should provide substantive inputs on CRT, IRT, and NRT to strengthen Evaluation. M. Singh (Agra University, 1994) conducted a study of the differential effect of Anxiety on Performance in Progressive and terminal examinations. A large majority of the candidates while taking examination are rarely normal because of the faulty examination system, be it admissions into the educational programmes, periodical tests, or 'At end test'. Fear of failure and aspiration for success keep disturbing the candidates. Could the Testing be personalized?

S. Meera (Avinashilingam Deemed University, 1995) evaluated the Total Internal Assessment System in this University. The Choice Based Credit System and Total Internal Evaluation are highly desirable.

K. Charate (Barkatullah University, 1993) investigated the causes of low achievement among normal children and attempted to design an appropriate curriculum and instructional strategies to tackle these. K.S. Vishwanathan (University of Calicut, 1997) studied the effect of Diagnostic Error Learning Strategy on the achievement of slow learners of Standard IX in Mathematics. K. Bose (JMI, 1996) studied the effectiveness of Computer Programmes as Remedial Strategies for overcoming certain Learning Disabilities. Neela Shelat and Anjali Mehta (MSU, 2003) investigated errors committed by students of Std. VIII in writing Gujarati. Number of attempts have been made on construction and standardization of tests in various areas. All these studies have definitely added to the knowledge base in the area of educational evaluation.

Environmental Education

Video film on Environmental Pollution was found to be effective in eliciting students' positive response (Indubala U.Singh, 1999, SGU, Surat). Teacher educators were found to be very positive towards Environmental Education (Anu Radha, 2005, Punjab University, Chandigarh). The

Instructional Programme on Environmental Studies facilitated the teacher in evolving teaching strategies for enhancing teacher pupils interactions during the acquisition of process skills (N. Ramkumar, 2004, MSU, Baroda). Fr. Rayappan Irudayam, SJ. (MSU, 2006) conducted a Study on Development and Implementation of a Computer Based Multimedia Software Package to Enhance Environmental Awareness in the Students of Std. IX. The Environmental Education needs to be institutionalized in teacher education very intensively.

5. Emergent Issues

Human Rights Education

A large majority of teacher educators, teachers and learners are not aware of Human Rights. There is progressively some awakening about human rights in the field of Teacher Education. A curriculum has been designed on human rights education for the children below the age of 14 years (Swaranaprava Sahoo, 2002, Utkal University, Bhubaneswar). The programmes designed, developed and implemented on Human Rights and Child Rights have been found significantly effective (Rucha Desai, 2007, MSU; Mamata Sheth, 2007, MSU). Human Rights Education ought to be integral area of Teacher Education.

Lifeskills and Value Education

Various studies on Lifeskills and Value Education have focused on aesthetic sensitivity, critical thinking, and value towards society, profession and family. Strategies developed for teaching critical thinking revealed that thinking approach can facilitate the student to understand and relate to the concepts through self-analysis, evaluation and judgment (Meghani, 1999, MSU). Some studies conducted on identification of deviant thinking patterns and clinical sessions thereof reveal that thinking patterns can change through counselling in a relatively short period of time. Cognitive counselling technique is useful in acquisition of desirable thinking (Goel & Joseph, 1994, DAVV). Induction programme for teachers' classroom communication was found to be effective in improving interpersonal relationship, patterns of communication through transactional analysis training (Nyarondia Samuel Maragia, 2000, MSU). Gender and Religion have been found to influence value formation. Model curriculum developed for crisis management was found to be helpful in achieving results in a desired way and recommended for consideration of The NCERT, CABE and SCERT (Sainath Pandurang Shenoy, 2005, Mumbai University). Lifeskills Education and Value Education ought to be well integrated in Teacher Education.

Population Education

The urban students have been found to have significantly higher

knowledge of population education than rural students. The urban teachers have been found to have higher positive attitude towards population education than the rural teachers (Pradeep Kumar Agrawal, 2002, Rani Durgavati University, Jabalpur). K. Luthra (University of Jammu, 1996) conducted a study of Population Education Awareness of teachers working at primary and secondary levels of education of Jammu Province. Harshavardhan (Bundelkhand University, 1995) studied the Attitudes of Rural and Urban teachers towards Population Education. R.S. Dakariya (Bundelkhand University, 1993) conducted a comparative study of Population Awareness up to middle stage and the teachers trained by DIET in Bhopal.

Technical and Vocational Education

Two studies on technical and vocational education have been reviewed which compared their educational status in different locations. Regarding comparative study of technical education of India and Germany, the findings revealed that the aims and objectives of technical education in India and Germany are same, except emphasis on profession and professional training in objectives of technical education. The vocational schools and University of Applied Sciences in Germany are autonomous. Vocational schools in Germany adopt State-wide common curricula unlike in India which is common nation-wide (Ajit Ram Rao Thete, 1999, BAMU). Another comparative study on vocational education interests of Urdu and Marathi medium students revealed that no significant difference was found between the mean scores on the vocational interest of the Urdu and Marathi medium students. The jobs related to household and social and scientific fields were preferred by most of the girls in the sample (Rahat Sultana, 2001, BAMU, Aurangabad).

Art Education

The studies on Art Education are very few. One study reviewed under the section 'Art Education' is on developing Art Education Curriculum for secondary level. The study reveals that there are problems regarding infrastructure facilities, curriculum and its transaction. Struggle for naturalism is identified as one of the psychological needs of the adolescent group. The secondary students need not only qualified faculty to teach the subject but also facilities and opportunities to practice. The study revealed that the students had developed a positive attitude towards the art education curriculum developed by the investigator (Parameswaran, O.P., 2001, MSU).

Deepak John Mathew (2005, MSU) conducted a study of the Development and Effectiveness of an Instructional Strategy on Colour and Form for Design Education. This is an exploratory study, which proved to be beneficial to both students and the design teachers alike.

Special Education

Studies on the Mentally Retarded

M. Bharathi (PU, 1993) studied the Psycho-Social problems of the mentally retarted and the role of Self-Help groups. G.F. Deshti (1995) conducted a study on the relative effectiveness of training techniques to bring out behavioural changes amongst the mentally retarted. Rajam Pillay (University of Kerala, 1995) studied the effect of individualized training programme on communication skills and certain associated variables in the mentally retarted. M.P. Anitha (University of Kerala, 1996) conducted a study of the dimensions of Teacher Effectiveness of the mentally retarted. R. Lal (SNDT, 1999) conducted an experimental study on inclusion of AAC System in the curriculum of Teacher Training in Special Education and its effect on Language Development of Children with Mental Retardation. M. Mann (KUK, 2000) developed an Educational Package for the Mentally Retarted Children. M. Sharma (MSU, 2004) developed and tried out an intervention programme for parents of children with Mental Retardation. R. Pandit (MSU, 2008) conducted a study on Effectiveness of Behaviour Modification Techniques in Children with Mental Retardation. R. Sinha (University of Lucknow, 1993) conducted a study on the Education for the Rehabilitation of SPASTICS: Identification of Potential Learners and Drop-outs among the Cerebral Palsied (SPASTICS) Children.

Studies on Learning Difficulties

L. Chaudhari (PU, 1996) conducted a study to Assess the prevalence of Learning Difficulties amongst high risk early school children.

Studies on Learning Disabilities

H. Tahiliani (JMI, 1998) studied the effectiveness of Remedial Reading Programme for the Learning Disabled and Normal Children. A. Khanna (PU, 1999) studied the effect of Multi-sensory Instructional and Playway Approaches towards the remediation of Spellings in Science of the Elementary Learning Disabled Children in relation to their Anxiety, Self-Concept and Locus of Control. I.B. Chughtai (Barkatullah University, 2000) conducted a diagnostic study of Learning Disabled Children in Language at Primary Stage and Try-out of the Remedial Measures. S.R. Reddy (Osmania University, 2001) conducted Training and Rehabilitation Services for the Persons with Disabilities in Andhra Pradesh. Pooja (KUK, 2004) studied the Arithmetic Error Profile of Learning Disabled Children for improving their Arithmetic Skills. S. Devi (PU, 2004) studied the effectiveness of differential Remedial Measures to improve spellings of fourth graders with Learning Disabilities. M.R. Umadevi (KUVEMPU University, 1997) studied the effectiveness of a Remedial Programme on improving Reading Comprehension Skills among Dyslexic Children. D.

Chauhan (PU, 2004) studied the effectiveness of different strategies for re-mediating Discalculia in Primary School Children.

Studies on Visually Handicapped

R. J. Vyas (Saurashtra University, 1995) conducted a study of certain Personality traits of Blind Students as compared to Sighted Students. Neelam (KUK, 1997) conducted a study of Creative Potential of Visually Impaired Students in relation to their Self-concept and Locus of Control. R.C. Mulwani (Gujarat Vidyapith, 1999) constructed and standardized a verbal group test of intelligence for the Blinds of Gujarat State for the age group 12 and above. Y.Chandra Mohan (Osmania University, 2001) studied the problems and needs of visually impaired students at Secondary Level in Andhra Pradesh. V. Bharti (DAVV, 2001) conducted a comparative study of the food habits and appetite in relation to Nutritional Status of the Normal and Visually Handicapped children (Aged 8-12 years) of Indore District.

Studies on Hearing Impaired

S. Shivji (MSU, 1995) has done critical appraisal of structural and functional aspects of Organizations for Hearing Impaired in Gujarat. B.B. Pandit (Bhavnagar University, 1996) developed a Basic Vocabulary in Gujarati Language for Hearing Impaired Children.

Studies on Physically Handicapped

N. Satsangi (PU, 1993) conducted a study of Adjustment, Self-Concept, Alienation and Altruism in Siblings of Handicapped and Normal Children. L. Gurnani (M.L.S University, 1993) conducted a study of Life Values, Personality and Creativity of Physically Handicapped Senior Higher Secondary Students of Rajasthan. S. Kamthan (Jiwaji University, 2002) conducted a comparative study of Personality dimensions of Normal and Handicapped (Polio Affected) Children.

Studies on Autism, Deaf and Dumb

C.A. Reddy (Jiwaji University, 1993) studied the effect of Physical Education Programme on Motor Behaviour and Selected Coordinative Abilities of deaf and dumb students. V. Hema Nalini (Avinashilingam University, 2005) developed Psycho-Social Pedagogic Intervention Strategies for Autism.

Studies on Other Special Groups

H.S. Shishodia (Agra University, 1993) analysed the Psycho-Social Aspects of Enuretic Behaviour in Children. S. Kumari Hooda (MDU, 1993) studied Special Groups of Students in Classrooms. R. Goenka (Guru Nanak Dev University, 1993) conducted a comparative study of Personality and Intra-Familial Relations of Delinquents and Non-Delinquents belonging to different Socio-economic groups. M. Seth (Lucknow University, 1994)

conducted a study of cognitive development in socially disadvantaged children (Orphans). S. Acharya (Berhampur University, 1995) studied the Personality, Motivational and Cognitive competencies of Invulnerable Children. R. Mehta (MSU, 1996) conducted an experimental study to analyze the differential impact of Therapeutic Intervention Strategies on some disruptive behaviour disorders. V.D. Bindal (Jiwaji University, 1998) conducted a study of Relationship between Family Background and Postural Defects in Primary School Boys. M.K. George (Pune University, 1998) conducted an enquiry into extent and causative factors of educational backwardness among the Marine Fish workers of Kerala. Jasbir Kaur Virk (MDU, 1999) conducted a study of motivational areas of Special Groups of Students at different levels of SES and Intelligence. P.M. Thomas (University of Mumbai, 2002) studied the influence of the Teachers' Presence in Don Bosco System of Education on the development of the Personality of Students as compared to other educational Institutions. R. Bobby (SNDT, 2002) studied the effect of Music Therapy on the Behavioural Responses of Children with Attention Deficit Hyperactivity Disorder. R. Ruhela (MJP Rohilkhand University, 2003) conducted a comparative study of Impulsivity, Locus of Control and Adjustment of Slow Learner and Normal Children. A. Varshney (University of Lucknow, 2004) studied the Cognitive Performance and Affective Disposition of School Children with Nutritional Anemia.

Studies on Inclusive Education

A.V. Jagtap (Pune University, 1996) studied Integration of the Disabled Children in Mainstream Schools of Maharashtra. S. Sudarshan (Bharathiar University, 1999) conducted a study of Issues and Challenges Encountered by the Resource Teachers, Regular Teachers, School Administrators, Visually Disabled Children and Non-Disabled Children in the Teaching-Learning Situations in Integrated Education Programmes.

Special Education is a very challenging task. It demands full identification with the children. Even Software such as JAWS (Job Access With Speech) are not readily available for the Visually Handicapped. Compatible Kits are not available for the Hearing Impaired and Organically Challenged. Designing Behaviour Modification Techniques for the Mentally Retarded is a highly skillful task. Even more challenging is to treat them. Children with learning disabilities, learning difficulties, visual handicap, hearing impairment, physical handicap, cerebral palsy, anemia, autism, all need special care and treatment. Inclusive education demands highly caring institutions, competent staff and congenial conditions. Teacher Education should make suitable provisions for all Special Children.

6. Educational Management and Administration

About 3.5% of the GNP in India is spent on Education. The distribution also varies from Pre-Primary Level to Tertiary Level. Research gets the

least share which is less than 1% of the GNP. A large number of teacher education institutions are still being governed by traditional, conservative, bureaucratic model rather than by Human Relations Model. Mostly, in the private sector, the focus of the Teacher Education Trusts is most on Finance and Market, and least on the Growth & Development of human beings. Even by the public sector, there is an abrupt cut on the teaching faculty. The State-supported Universities and Colleges continue to have their inflexibility and insensitivity. There are imbalances in Teacher Learner ratio. There are imbalances in Learner: Learning Resources ratio. Which Management Theory proposes fully qualified teachers as "Shiksha Shayak/Shikshak Sahayak"?

There are problems of management of admissions in various programmes, Time-Space-Personnel Management, Learning Resources Management, Management of Examinations, Placement and Promotion. There are problems of Organizational Behaviour and Organizational Development. There is a wide scope for developing healthy Organizational Climate. Post-Conventional Autonomous, Creative Leaders and Administrators are rarely appearing. Total Quality Management is a myth and figment of imagination. There are problems of teacher 'rust-out' and teacher 'burn-out'.

Unless we put in concerted efforts to produce a cadre of Educational Administrators and Managers, the Nation will keep witnessing the Judicial Activism subsuming the roles of the executive, over-action of the social activists and displeasure of the State. We need Indian Education Service (IES) cadre persons to guide Indian Education and Teacher Education who shall be in a better position to do this task because of their understanding of education and allied disciplines.

7. Research Methodology in Education

There are more of quantitative studies than qualitative. The studies are scattered and unlinked. There is lack of continuity, cumulativeness and synthesis. Most of the studies are descriptive rather than preventive and ameliorative. Culture for incubation of ideas is grossly lacking, what to talk of inculcation. Statistics and Psychometrics are superimposing reality. There is a mixed scenario of Research in Education. Some of the observations are as follows:

- A large number of surveys have been conducted in Education. But the principles of objectivity, transparency and equivalence have not been adequately observed.
- In experimental research, the scholars largely move from induction to abduction to thesis to analogy to facts to theories. But inconsistent scattered researches lead us nowhere. Social laboratory is a myth and figment of imagination. It has become essential for the social scientists to evolve their own methods of investigation to sustain social life.

- In case study, research diagnosis of a case is as important as prognosis of its disposition. A large majority of us are comfortable in describing the problems and cases, but prognosis is lacking. Here the presage, process and product variables, all, need to be treated very carefully.
- Naturalistic enquiry, which phenomenology demands, needs to be conducted in an open, naturalistic, parametric setting. Because more and more are the controls in a social science laboratory, lesser and lesser is the generalization.
- Qualitative research cannot be conducted through *a priori* samples only. Sampling goes on throughout research, through various sampling techniques such as typical case sampling, intensity sampling, critical case sampling, sensitive case sampling, convenience sampling, primary selection and secondary selection. Qualitative Research cannot be conducted through static tools and techniques, because very often the researcher employing qualitative research methodology does not have a sound theoretical base related to the reality. Theory, in fact, is the product of enquiry. Qualitative research is affected by a wonderful interaction of subject and object. The object needs to be perceived as objectively and comprehensively as feasible.
- One of the basic tenets of qualitative research is awareness of one's own biases. There is a need to address diversity issues such as gender, race, religion, ability, sexual orientation and socio-economic status. The pursuit of knowledge should be conducted with sincerity and care.
- Critical theory takes, as a central concern, the issue of power in the knowledge context. It focuses on how and in whose interest knowledge is produced and passed on. Where are the funds floated? What is the interest? What is the return on investment?

8. Suggestions

- Surveys need to be conducted to estimate the teacher education institutions required countrywide, State-wise and Programme-wise. Every State should be asked by the NCTE to conduct surveys and submit the estimates within stipulated time.
- Norms and Standards for Teacher Education Programmes need immediate revision.
- There should be added focus of Research on Historical, Economic and Philosophical Foundations of Education. There is a need to develop Human Resource in all these relatively neglected areas.
- The effectiveness of research conducted so far in the area in Educational Technology and ICT is reasonably established. But,

the researches have failed to galvanize the system. There should be Research on Info-Savvy Skills and Techno-Pedagogic Skills.

- Purpose of a large number of presentations is defeated through power point mechanistic presentations. Approaches such as Dialogue Approach should be well integrated in Teacher Education.
- There should be due focus on learner-centered activities. Constructivist approach should be employed both with Information Given and Beyond Information Given. There is a need to move from Behaviourist Model to Communication Model to Interactive Models. Also, there is a need to move from Cognitive Approach to Socio-Cognitive Approach. Rather than going by monolingual models, we need to evolve multi-lingual models. There is a need to develop programmes to realize the above objectives. The effectiveness and efficacy of all these programmes needs to be studied.
- There should be more studies on Human Rights Education, Health and Hygiene, Lifeskills Education and Environmental Education.
- The qualitative research methodology needs to be employed more rigorously. Rather than re-coursing to the old theories, there should be added focus on grounded theories. Participatory research with service motive needs to be strengthened.
- There should be due scope for Self-Evaluation, Peer Evaluation, Group Evaluation, Teacher Evaluation, School Evaluation and Community Evaluation in Teacher Education programmes. There should be research on the related factors contributing to comprehensive evaluation.
- Teacher Education should seek the resources of all sectors – Public and Private. Unless and until all sectors cooperate Teacher Education programmes and courses cannot be offered. Courses such as Environmental Education, Guidance and Counselling, Health and Yoga Education, ICT in Education definitely demand services of the Corporate Sector. The market forces should emerge as educational forces. There should be research on the relative contribution of these sectors for the realization of the objectives of teacher education.
- Teacher Education Institutions can hardly afford to function in isolation, both within and among. Inter-disciplinarity and multi-disciplinarity should be practised by the TEIs. The inter-disciplinary and multi-disciplinary research should be promoted in Teacher Education.
- There should be suitable programmes for the In-Service education of teachers and teacher educators.
- Innovative Teacher Education Programmes such as Personalized Teacher Education need to be institutionalized for

the realization of holistic Teacher Education through flexible time management, variety of modes of learning, Diversified and Participatory Evaluation, Personalized Environment, Learner Freedom, Teacher as a Facilitator, Organizer and Inspirer and Field Linkages.

- There should be differential inputs in Teacher Education programmes. There should be suitable inputs corresponding to the differences in the IQ, Learning Styles, Languages, Interests, Abilities, Cultures, Maturity levels and other conditions of the learners.

9. Concluding Remarks

There is a need to bridge the gap between the intake of TEIs and demands of teachers. The NCTE with the cooperation of state governments can contribute a great deal in the judicious establishment of teacher education institutions. The induction criteria into teacher education programmes need to be validated. There is a need to work out the relative predictivity of various factors, namely, Teaching Aptitude, General Mental Ability, Social Sensitivity, General Language Ability, Living Skills, Techno-Pedagogic Skills, Techno-Savvy Skills for induction into teacher education programmes. We take off with the contents and end up with the contents. The take off ought to be with the intent of meeting the developmental changes and outcomes in the form of development. The modular descriptors could be Developmental Challenge, Educational Determinism, Message and Media, self and social transformation. There should be a shift from Subject-Based Learning to Problem-Based Learning. Teacher Education should not aim at superficial learning for change in behaviour but it should emphasize the holistic understanding with mindset of feelings, social trust, and protection of environment.

Teachers should be equipped with the skills of developing critical thinking abilities. Intervention programmes are required in areas such as environmental education, emotional education, special education and computer education at elementary and secondary levels. Training of teachers in transactional analysis is required for enhancing their communication in classrooms. Teachers need to be educated on multiple intelligence skills and to be prepared for varied perspectives. There is a need to bridge the gaps between teaching competencies expected and practiced and between teaching styles and learning styles. There is a need of integrating techno-pedagogic skills and lifeskills. Also, there is a need for specialization in emerging areas, such as humanistic education, peace education, inclusive education, value education, Yoga education, ICT in education.

10. Epilogue

Research in Teacher Education though scattered and largely

unconnected, contributes significantly to its development. A learning resources centre can be created where the relevant quality educational material developed by the researchers can be stored such as learning resources on various subjects, tests and tools constructed by the investigators and compendium of Research Abstracts. The Techno-Pedagogic Skills can be deployed and implemented throughout the nation as micro-teaching and models of teaching. Teacher Education Universities should be established in all the regions to enhance the relevance and quality of teacher education and to build its research base.

India is one of the largest producers of manpower in education. There are fair expectations from teacher education, which it is trying to meet. The judicial activism, the State displeasure, the hue and cry of the Trusts, the grievances of the professionals are but natural. The system has to rise to the occasion to overcome the challenges and to move forward on the path shown by hardworking and forward looking researchers.

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7. **Prof. M.M. Pant,** former Pro-Vice-Chancellor IGNOU, is pursuing next generation learning, using blogging, wikis, podcasting and social networking tools, delivered on mobile phones and other handheld devices. Has been on the faculty of IIT, Kanpur, NIT, Allahabad and Visiting Professor to the University of Western Ontario, Canada.

8. **Dr. M.N.G. Mani** served as the Principal of Sri Ramakrishna Mission Vidyalaya College of Education, Coimbatore, for many years. Has published extensively in teacher education and special education. He served as a member of many professional committees of RCI, NCTE, NCERT, UGC, and IGNOU and also worked as a Consultant of UNESCO, UNICEF and WHO. He has made academic visits to 45 countries.

9. **Shri C.K. Misra** was a member of the founding faculty for the development and execution of an innovative four-year integrated programme of vocational education (B.Com. B.Ed.) offered in the NCERT's Regional Institute of Education at Mysore. Later, as a faculty of the Department of Vocationalisation of Education, NCERT, made significant contributions in curriculum development, teacher training and also as a Consultant to various national and international projects in vocational education. Served on the Editorial Committee of a book "Vocational Education and Training through Open and Distance Learning" published by NIOS.

10. **Prof. Bhuleshwar Mate** is presently Professor in the Department of Fine Arts, Assam University. He has made extensive contributions to the field of Arts and Aesthetics, both in the areas of school and higher education.

11. **Prof. Jasraj Singh** is the Professor of Physical Education and Director, UGC (Academic Staff College), Lakshmibai National Institute of

Physical Education, Gwalior. He specializes in Yoga, Meditation and Exercise Physiology and has published papers in these fields.

12. **Prof. Swapan Mookerjee** is a Professor at Bloomsburg University, USA. Has contributed extensively in the field of health and physical education.

13. **Prof. Mohan Menon** was associated with the Centre of Advanced Studies in Education, Maharaja Sayajirao University, Vadodara, Gujarat. Later joined Indira Gandhi National Open University as a Professor and Director of School Education. He also held the position of Chairman, National Open School and later served as Team Leader, Education Programme, Commonwealth of Learning (COL), Canada. He is presently working as Director (OiC), UNESCO-UNRWA Education Programme in Amman, Jordon. He has contributed extensively to the field of Open and Distance Learning.

14. **Prof. G.L. Arora** retired as Professor and Head, Department of Teacher Education, NCERT in 2001. Earlier worked as Director SCERT, Delhi between 1992 and 1995. In the early nineteen-nineties, worked as Member Secretary, National Advisory Committee (Prof. Yash Pal Committee) on Academic Burden on School students. Also worked as World Bank Consultant in Nepal and as UNESCO Consultant in Sudan. Represented India in many international seminars and workshops on education. Areas of special interest are Teacher Education, Curriculum Planning, Human Rights Education and Early Childhood Education. Presently working as a member of Education Reforms Commission, Mizoram.

15. **Prof. C. Sheshadri** is a distinguished scholar in the philosophy of education and an eminent teacher educator. His major career was with the NCERT which organization he served with distinction till his retirement as Principal, RIE, Mysore. He has also contributed immensely to the projects and programmes of NCTE, NUEPA and NAAC in areas related to teacher education, educational planning and management. Prof. Seshadri's expertise and experiences have been eminently utilized by many international organizations like UNESCO, DFID in their major projects in the areas of literacy, basic education and teacher education.

16. **Prof. Marmar Mukhopadhyay** is a specialist in quality management. Among his numerous academic contributions is his book, Total Quality Management in Education, published by Sage Publications (2nd Edition, 2005); a few others are: Education in India; Dynamics of Development, Leadership for Institution Building in Education, Value Development in Higher Education, Educational Technology Knowledge Assessment, etc. He has been involved in educational policy making and planning at the highest level in India; has held leadership positions in several internationai

and Indian institutions including ICDE (Oslo), IMAGE (Washington D.C.), NOS (New Delhi), NIEPA (New Delhi). He is currently Hony Director of Educational Technology and Management Academy, New Delhi.

17. **Prof. C.S. Nagaraju** obtained M. Ed. (I RanK) and Ph.D. in Education from Bangalore University and under the British Council Scholarship, obtained MA in Rural Social Development from Reading University, UK. Worked as Social Scientist in Satellite Continuity Research Project of Space Applications Centre, ISRO, to evolve good practices of developing educational TV programmes. Joined Institute for Social and Economic Change, Bangalore as Associate Professor in 1981 and left to join NCERT as Professor in 1997. Served as Head of two departments, namely DPPSEE and DERPP. Worked as Academic editor of Sixth Survey of Educational Research in India, Vol I. His last assignment with NCERT before retirement was as Principal, RIE, Mysore.

18. **Prof. S. Mohanraj** is a Professor in the Central Institute of English and Foreign Languages (Deemed University), Hyderabad. He has made contributions in the field of English language teaching and particularly in the professional development of teachers through various modalities of professional development programmes.

19. **Prof. Shri Prakash** had a long career with National Institute of Educational Planning and Administration (NIEPA). In the field of Management, he has made extensive contributions and is presently Head of Birla Institute of Management and Technology, Greater Noida, Uttar Pradesh.

20. **Prof. V.P. Garg** retired as Dean of Instruction and Head, Department of Education, Regional Institute of Education (NCERT), Ajmer, in 2002. Served as Joint Advisor, Education, in the Planning Commission between 1995 and 2000 and Senior Consultant in Indira Gandhi National Open University on MHRD sponsored programme 'DEP-SSA'. Now serving as Chief Consultant in the National Council for Teacher Education on Project "Demand and Supply Estimates of School Teachers and Teacher Educators in the States/UTs: 2007-2008 – 2016-17".

21. **Dr. Shoeb Abdullah** is a senior Reader in Education in the Institute of Advanced Studies in Education, Faculty of Education, Jamia Millia Islamia, New Delhi. Has contributed significantly in the fields of Science Education and Teacher Education. He has been closely associated with the monitoring of implementation of the Sarva Shiksha Abhiyan on behalf of Ministry of Human Resource Development, Government of India.

22. Prof. D.R. Goel is serving as Professor of Education at the M.S. University of Baroda, Vadodara, Gujarat, India. He is Coordinator, UGC Special Assistance Programme at CASE. He is Chairperson, Western Regional Committee, NCTE, Bhopal.

23. Dr. Chhaya Goel is serving as Reader in Education at the M.S. University of Baroda, Vadodara. Has contributed significantly to the Personalized Teacher Education Programme innovated and institutionalized at the Devi Ahilya University, Indore. Areas of her prime interest are Teacher Education, Educational Technology and Educational Psychology.