

1. Details of Module and its structure

Module Detail	
Subject Name	Education
Paper Name	Perspectives, Issues and Research in Teacher Education
Module Name/Title	Scope of Teacher Education Programmes in India
Module Id	e-PG EDN 10.03
Pre-requisites	Basic understanding of Scope of Teacher Education Programmes in India
Objectives	<ul style="list-style-type: none"> • To understand the concept and significance of teacher education programmes • To discuss the functions of pre-service and in-service teacher education programmes • To explain the scope, merits and demerits of e-teacher education and e-learning
Keywords	E-Teacher education, In-service Teacher Education Programme, Pre-service Teacher Education Programme, Teacher Education Programmes,

2. Development Team

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1. Introduction

Teacher Education Programmes (TEP) are a systematic plan of knowledge and activities wrapped in the form of a course to help the students of today become the professionals of tomorrow in the field of education. TEP facilitate professionals to contribute in attaining the national goal of *Education for All*, to preserve the continuity of traditions, to fulfill the actual needs of contemporary society and to meet the challenges of the uncertain future, through education. Education deals with human beings who have intellect, emotions and conscience; it is not something static but a dynamic process. It is a form of development for which direction is needed from an educative agent. Thus, TEP prepare prospective teachers to acquire the knowledge, repertoire of skills and attitude through process of discovering, analyzing and synthesizing educative experiences. TEP (refer Figure 1) are of two types:

- Pre-Service Teacher Education Programmes
- In-Service Teacher Education Programmes

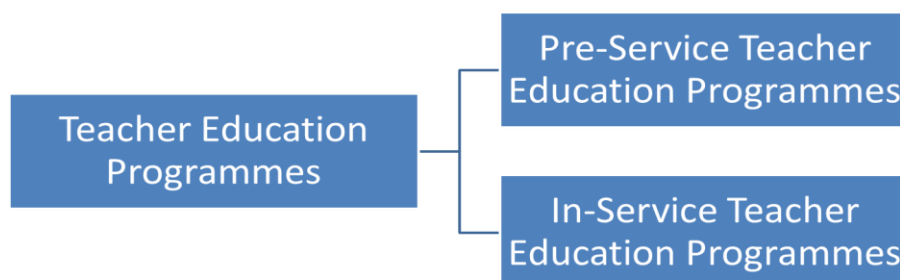


Figure 1: Types of Teacher Education Programmes

2. Pre-service Teacher Education Programme

Pre-service teacher education is the course which is offered to the students before they join teaching profession and leads to a degree or certification to make a person eligible to join teaching profession. In planning for effective pre-service teacher education, an integrated view has been taken of all its stages by the National Council for Teacher Education (NCTE). The integration of TEP has been done both horizontally and vertically. Vertical integration means that the pre-service teacher education right from pre-school teacher education to the university teacher education is inter-related. In horizontal integration the institutions, agencies and social groups concerned with the effectiveness of pre-service teacher education

link together their efforts for professional education and development of teachers. It is essential to insist that teacher educators from teacher education institutions/ colleges/ departments should assist secondary and primary school teachers to improve their attainments. There has to be a mutual communication between all the levels of instruction to improve the standards of pre-service teacher education, particularly in a developing country like India.

According to the NCTE curriculum framework (1988), TEP is a professional programme which aims at the development of teacher as a person and as an agent of social change. Teacher education for all stages of school education is the most crucial input for the improvement of quality of school education.

a. Objectives of Pre-Service Teacher Education Programmes

Pre-service teacher education programmes at all levels should seek to equip in the prospective teacher with:

i. Knowledge and understanding of:

- the Indian socio-cultural context and the role of education in national development.
- the process of human development and learning and its implications to education.

ii. Professional competencies and skills related to:

- effective communication
- effective curriculum transaction, utilizing learning resources of various kinds and employing interactive teaching learning strategies to promote all-round growth of the learners.
- comprehensive and continuous evaluation of learner's progress through appropriate tools and techniques.
- effective management of learning within and outside the classroom to maximize learner's growth.
- catering the learning needs of special groups of learners like: the gifted, the slow learners as well the disabled learners.
- organizing co-curricular activities of different kinds to promote all-round growth of learners
- offering guidance to learners in their personal, academic and occupational problems
- research and experimentation in education.

iii. Social commitment through participation in:

- developmental activities in the community, extension activities and community service
- complementary and parallel educational service systems like non-formal education, adult education, education of workers, etc.

iv. Positive attitudes towards:

- learners, learning, school, professional growth and manual work.

v. Social, cultural and moral values oriented towards unity and integration of our people through the concepts of:

- democracy, secularism, scientific temper, egalitarianism, cultural heritage, conservation of the environment, civil responsibility.

vi. Aesthetic interests and appreciation towards:

- literary, cultural and artistic pursuits.

All these objectives of pre-service teacher education interpret and unfold the enigma that modern education aims at holistic growth and development of a person. Every teacher should have deep knowledge and understanding of children and have the capacity (including skills) of practically applying the knowledge into practice. These cannot be acquired by rule of the thumb and very often an untrained teacher has to learn the job by an arduous and long practice/ experience. Thus, to create good teachers the whole teacher education system should be built on a sound foundation of the practical and practice oriented theoretical knowledge. The emphasis should be on special techniques, devices and literary education that produce informed, cultured and disciplined minds; and to make teacher education comprehensive in nature, wide and varied in scope. The practice teaching has to be more effective and adequate to ensure success in the profession.

Thus, the Pre-Service Teacher Education programmes should be able to keep the entire personality/ capacities of the prospective teacher in mind. It should be able to prepare a teacher as an 'individual' and as a 'professional' who is able to live a complete, useful and

satisfying life at school, at home and in the society and hence is able to fulfill the hope, face the challenges and meet the highest expectations of the profession in future.

b. Functions Of Pre-Service Teacher Education Programme

The salient functions of the pre-service teacher education programme are to

- enable the student-teachers to gain insight about himself and his pupils,
- strengthen his perception of social values and goals,
- make him conscious of his professional obligation to serve children and youth,
- enable him to feel and appreciate the dynamism inherent in the teaching profession,
- motivate him through the realization of this dynamism, to become an effective teacher.

c. Curriculum of Pre-service Teacher Education Programme

The curriculum of pre-service teacher education envelops all those important areas which help in preparing an effective teacher like knowledge of:

- how children and youth absorb formal and informal learning in the school, at home and in the community
- the objectives of school education as related to the needs of the Indian society and its relationships with the international communities
- the school as an institution and of the principles and the skills involved in the organization of its managerial and instructional work by best utilizing the available facilities, abilities, and energies of teachers and pupils
- the curricular subjects for which instruction is to be imparted in the school and of the techniques suited to each topic of the subject
- the different roles of the teacher in the school and the community and the attitudes and skills which have to be acquired for playing the roles successfully
- the educational system and the professional conditions within which the teacher must operate
- how to utilize the resources and programmes which would lead to the continuous professional growth.

Most educationists are of the opinion that an effective TEP should consist of three basic elements:

- Study of languages and humanities
- Study of mathematics and science
- Work experience based on participation in the productive and social activities, appropriate to the needs of the community as well as to the development of the child.

Work experience includes exposure to economically productive creative activities. It also bridges the gap between intellectual and manual work by encouraging in the students, the attitudes which would help them to engage in productive process. Experience promotes innovative thinking as well as fosters the habits of precision, perseverance and self-respect through socially useful productive activity. When community service is added to manual work, the aims of work experience become wider and the learner is lead towards minimizing the gap between education and illiterate masses. Work experience should therefore be provided in two forms: (a) productive work experience related to technology and (b) work experience in community services and group life.

The NCERT has prepared self-instructional modules for pre-service training of teachers at different levels. They are flexible and can be used in cyclostyled sheets, printed textbooks, loose-leaf notebooks, blackboard exercises for group work, through teaching machines, computers etc. In TEP instruction does not help in the acquisition of knowledge but in developing the self-study habits. It develops logical thinking which helps in developing and sequencing the teaching material.

The maintenance of professional standards of teacher education is the mandate of the NCTE. Over the years attempts have been made by the NCTE to maintain/improve academic standards by preparing and implementing uniform curriculum and teaching modalities throughout the country. Certification of teachers after successful completion of pre-service TEP, have also contributed in maintaining/ improving the standards of education. The practice of certification is considered as a very effective means of inducing the continuous professional growth of teachers and maintaining professional standards.

Pre-service teacher education, thus, develops better understanding of children, builds confidence in the new teachers, makes them familiar about using methodology of teaching with new techniques, builds positive attitude towards teaching profession, familiarizes with

the latest knowledge of the profession, develops attitude towards research and experimentation, creates social insight and teaches the teachers to live a community life, improves their standards of teaching and strengthens the democratic set up of the country by making them a good and useful citizen of the country.

3. In-service Teacher Education Programme

In-service teacher education is a programmed, systematized, attentive, needful and scientific planning with a definite purpose in view. It is a continuous process which contributes to the behavioral changes of teachers in terms of acquisition of knowledge and insights, development of right attitudes and interests. It is goal oriented and is organized in such a manner that the teachers feel the desire and necessity for the improvement of their mental faculties and skills. In view of the all-round rapid technological changes it is essential to promote professional competence and intrinsic motivation among teachers. The World Education Commission has also reiterated the importance of quality in-service education for trained, untrained, fresh, under-qualified teachers to keep pace with the rapid changes in the education system in the country.

There has always been a gulf between teaching and practicing in the colleges of education. There are big challenges in front of educational institutions and the teachers therein for curriculum implementation, examination and evaluation system, and admission policies. Due to introduction of new concept of education to enter 21st century successfully, the improvement in the professional education of teachers has left much to be desired. The new innovations aim at evolving more effective and more flexible forms of education. Modern technology of education has changed the techniques and methodology of the teaching – learning process. Therefore, the teachers have to be abreast with new innovations and concepts of education. The **Public Order Act** (POA, 1986) appraised the role of teachers in extension and social service, participation in management of variety of services, activities which educational institutions undertake, in research and innovations, creative and responsive to the needs and concerns of the community, support in administrative hierarchy and in implementation of educational programmes. Nonetheless, it emphasizes the need for effective and efficient in-service education of teachers at various levels of education to motivate and inspire teachers in order to become constructive, creative, innovative and professionally responsible.

The need for in-service education of teachers was recognized as early as 1904 in Lord Curzon's Resolution on educational policy. **Mudaliar Commission (1952-1953)** was more specific in recommending the programme of extension service to provide in-service education to secondary school teachers. The **NCERT** has promoted experimentation in the classroom instruction by teachers through extension service departments. In 1964 State Institute of Educations (SIEs) were established to organize in-service education of primary school teachers. SIEs/ State Council of Educational Research and Training (SCERT)s are main agencies for planning, implementing and monitoring in-service education at state level. At district level District Institutes of Education and Training (DIET)s are performing pace-setting role for training and orientation of elementary school teachers, headmasters, supervisors, etc.

Although pre-service teacher education and in-service teacher education are given at different stoppages of education, they have to be planned and executed as two essential constituents of a single integral system, neither being complete without the other. In fact, in-service education follows a full-fledged face-to-face regular pre-service education which enables a person to enter a teaching career. In-service teacher education is a form of movement, in which all teachers, teacher educators and administrators participate enthusiastically and enjoy this activity. A well designed, carefully planned and properly executed system of in-service teacher education in our educational system is the need of the hour (**NPE-1986**). Accordingly it should have the following considerations:

- The pre-service teacher education programme which merely leads a prospective teacher to the profession of teaching is never complete if it is not supplemented by periodic in-service teacher education programmes. The rapid changes in content areas, pedagogical science, changes in socio political scenario, job expectations of a teachers that necessitate the need for In-Service teacher education programmes which are therefore based on the concept that the learning of pre-service programmes need to be examined, confirmed, rejected, modified or reinforced on the anvil of experience of the real teaching – learning situation, and the developing maturity of the teacher.
- During the early stages of their career, teachers need support and guidance to help them during the transition from the supportive culture of pre-service education to the actual problems of the school. In the absence of such programmes, many teachers fall back for mere survival in the routine work.

- In-service education of the teachers becomes all the more necessary, not only in view of the advancement in knowledge of the subject he teaches but also due to experiments and innovations in the field of pedagogy and the skills required to adopt innovative practices. The periodic changes in the curricula and instructional materials also necessitate the need for in-service education programmes for teachers in order to enable them to handle the new materials with ease and effectiveness.
- A teacher can make his/her teaching more interesting and effective with the help of teaching aids, produced with ever-developing technology. The teacher needs to be trained and retrained periodically regarding the production and use of appropriate audio-visual aids.
- A teacher has to handle special groups of children, like the differently abled, the backward, the gifted, the socially disadvantaged and the economically deprived. In the pre-service education programme such knowledge is given theoretically but the in-service teacher education programmes further equip the teachers with necessary practical skills to handle such children.
- In-service education brings into focus the desirability of a teacher to always remain a learner during his/her professional life, thus avoiding obsolescence, fossilization and irrelevance of knowledge.
- The teachers could be made abreast of global perspectives regarding changes in the ideas about the theory and practice of education in different countries which may help them to give a fresh look at their own thinking and working styles.

a. **Objectives of In-Service Teacher Education Programmes**

The objectives of in-service teacher education are to:

- address the teacher's deficiency arising out of defects in their initial pre-service education;
- advance the teachers skills and pedagogical knowledge required for new teaching roles;
- advance and update the teacher's knowledge of subject matter;
- train them as an agent of change;
- provide education for rapid and self-conscious adoption to changing world;
- prepare teachers for self-education and as learners;
- prepare teachers for lifelong education;

- prepare teachers for utilizing all the formal and in-formal agencies of education;
- train the teachers for non-tutorial posts;
- make them understand and face in time new situations coming up in society and to prepare their students for the new economic, social and cultural challenges;

b. Nature of In-service Teacher Education Programme

To fulfill these objectives the nature of in-service teacher education programmes suggest to have:

- fulltime correspondence/open and distance (ODL) courses leading to a degree or diploma in teacher education
- post-graduate courses of one year duration leading to a degree,
- short in-service programme of three to six months duration covering general and special fields,
- summer institutes and summer camps,
- short orientation programmes, introduction courses
- evening or part time courses
- exchange of senior professors for short periods, visiting fellowship for younger teacher educators for independent study in selected University departments, research institutions, other specialized agencies, study groups, etc.
- sabbatical leave arrangements for staff to visit or undertake courses at training colleges.
- provision of visits by teacher educators to foreign countries through parent University, UNESCO and other national agencies.
- Arrangement of seminars, workshops / conferences, group discussion, symposia, exhibitions, extension lectures, etc.

The in-service teacher education system should be based on a policy evolved to encompass both, the quantitative improvement in terms of coverage of all the teachers and the time to be made available to them for professional renewal, and the qualitative improvement in terms of knowledge, understanding, skills and attitudes necessary for effective and creative teaching in the classrooms. In Service Teacher Education schemes should however, realistically and clearly indicate long term and short term objectives.

To ensure effectiveness, in-service teacher education programmes should be essentially need based, that is, while designing the programmes it should be based on the needs of the field, the needs felt and expressed by the teachers and their schools. The need of teachers of different subjects, the beginning and the experienced teachers, under qualified teachers and other categories should be catered to, besides the needs and plans of the future development may also be taken care of. Generally remediation, content enrichment, awareness and understanding of new developments in the subject and its pedagogy, awareness about contemporary issues in school education, skills in improving teaching aids, handling audio-visual aids and using computers for instructional purpose are the common needs of most of the practicing teachers.

Both intrinsic and extrinsic motivation of teachers for participating in the in-service teacher education programmes is essential to ensure their effectiveness. The need-based nature of the programme and the requirements of participation for purpose of confirmation promotion will achieve it to some extent, but the real motivation will depend on the teacher's perception of getting some worthwhile professional gain from the programmes. A climate be created in which the teacher keeps looking forward to their further learning on a continuing basis.

In-service teacher education programmes should be planned meticulously and conducted with utmost seriousness. The course outline should be developed on the basis of need assessment and training packages need to be finalized well in advance. Resource persons should be selected with care because effectiveness of the programme will by and large, depend on their caliber, expertise, motivation and seriousness.

The teachers as well as schools should know clearly about the immediate agency or institution which they can approach as and when they need professional help and feel assured that they will be welcomed and will get the needed support. Two-way communication channels can be strengthened for this purpose. This will enhance the effectiveness of the programme. In most cases, the institution which has provided the initial pre-service education is the place with which the teachers feel the most comfortable. But generally elementary teacher education institutions, the resource centers, the school complexes and the nearest secondary teacher education institutions are the obvious choices in this connection. It is essential that all those who are connected with in-service programmes in any manner are sensitive to teacher's need, problems, ambitions, and aspirations; have genuine regard for

his/her individuality; exhibit appreciation and respect his/her status as well as work; have faith in the teacher's potential contribution to the development of the community and the society.

The target groups for in-service teacher education are varied. Effectiveness of the in-service teacher education programme is judged from the provisions it makes to cater from to the needs of these varied group of professionals to improve their cognitive, affective and psychomotor domains. Opportunities have to be provided for the interactions of various groups, like:

- Teachers of primary, elementary secondary, higher secondary schools working in public/private/aided schools under different administrations (state/centre).
- Teacher educators at different levels
- Teachers involved with school curriculum development.
- School supervisors and guidance counselors.
- Heads of schools, para academic staff and other support service in educational institutions.
- Resource persons at various levels.

c. Scope and Context of In-service Teacher Education Programmes

Scope and context of in-service education programme revolves around a few concepts such as: the main content of the in-service teacher education programme should be based around i) the school curriculum and ii) the innovations in pedagogy. Changing curriculum areas and enrichment of curriculum and development of new approaches to teaching methodologies will always provide the material for the organization of in-service teacher education. The other areas of in-service education could be concerned with the development of awareness about vital contemporary issues, development of professional skills and abilities including these required for development of instructional materials and evaluation procedure. Clarifications of concepts, development of healthy attitudes and values, motivation devices and pedagogical theories are also areas of concern for in-service education. Some new items in the content may emerge according to need and development of education from time to time. The planners and organizers of in-service teacher education programmes have to remain constantly sensitive and responsive so as to identify the new needs promptly and organise the needed programmes timely so as to have their immediate impact.

A structured and comprehensive course should be revised for the in-service teacher education programmes suggested earlier, compulsory for all the teachers once in five years (Kothari Commission, 1964-66). It should include 1) **Theory**: foundation and professional areas and 2) **Practice**: methodology of teaching, evaluation tools, multimedia aids, and pupil guidance. The in service teacher education at the secondary and higher secondary stages can be subject specific also. A course in a subject will obviously have two parts, viz. i) Theory and ii) Methodology of teaching in the subject concerned. The theory component should be minimum possible as the basic purpose of such courses is to develop new understandings in the subject concerned and develop skills required for effective transaction of its curriculum. Facilities for in-service teacher education are provided by some well-defined agencies in order to develop an effective programme. For optimum utilization of time and resource, it is necessary to specify clearly the respective specific roles and responsibilities of different agencies and close collaboration among the various agencies. At the national level a central agency NCTE plays a significant role, involves NCERT and UGC for this purpose, lays down policies, prepares guidelines for practical execution and monitors the in-service teacher education system. Thus the major responsibilities for in-service teacher education should be shared by:

- i. NCERT at the national level;
- ii. SBTEs (State Boards of Teacher Education), SCERTs, SIEs, SIESEs (State Institutes of Science Education) and such other institutions at the state level;
- iii. DBEs (District Boards of Education), DIETs and ETTIs (Elementary Teacher Training Institutes) at the district level;
- iv. Colleges of Teacher Education (CTEs), IASE (Institutes of Advanced Studies in Education), Institutes of Research and Development, CBSE/SBSE (Central/ State Board(s) of Secondary Education);
- v. Professional associations of schools and principals, such as Indian Public Schools Conference, Progressive Schools Association, Association of teachers of different schools subjects, and the school complexes;
- vi. Alumni associations of teacher education institutions, teachers clubs etc.

The in-service teacher education programmes could be: (i) teacher education institution based which helps in the professional growth of teacher educators and utilize the resources of the institution for conducting such programmes so as to lead to the improvement of school

education; (ii) the school based in service teacher education is significant, as it leads to the total improvement of school and universalizes the provision of in-service teacher education. This programme should be more teachers-based because that is better from motivational point of view and depends on self-education, placing the onus and responsibility for education on the teacher themselves.

The in-service programmes should be concerned with the teacher's humanistic development, his/her behavior skills, the organizational setting in which he/she performs and his/her role in expanding school and university/college relationship. They should be helped to understand their own nature, motives and behavior; explore their attitudes, values and beliefs through small group counseling, sensitivity training and individual guidance. Rural teachers should be provided exposure to their culture to establish a congenial and healthy teaching-learning environment. Once the teacher identifies the behavior patterns in his/her classroom he/she can easily acquire a variety of teaching style which permits him/her to vary his/her pedagogical approach as required by the changing needs. In-service planners must be sensitive to variations in the learning climate of a school while developing their programmes. The pre-service and in-service programmes should be interrelated to make in-service teacher education an effective programme.

The NPE (1986) also emphasized on providing opportunities for professional development, initiative for innovation and creative work, proper orientation in concept development techniques and value system to fulfill their role and responsibilities for the teachers of higher education. The new teachers recruited to teach in the institutions of higher education have hardly any knowledge of student psychology, their behavior and classroom interaction.

Therefore, it is proposed to

- i. organize specially designed orientation programmes in teaching methodologies, pedagogical knowledge and educational psychology for new entrants at the level of lectures of various disciplines.
- ii. organize refresher courses for serving teachers to cover every teacher at least once in five years.
- iii. organize orientation programmes by using the internal resources of universities and bringing a number of college together.
- iv. organize seminars and symposia to encourage teachers to develop capability in the profession.

An effective in-service programme must be based on the needs of the teachers and their institutions. Some of the needs of the teachers arise because of the changes in policy at the national and state levels. New curricular content or emphasis on certain objectives may arise necessity to meet the national challenges which can only be met through teachers orientation and in-service education programmes. Advances in pedagogy and application of information and communication technology (ICT) to classroom instruction would also result in fresh in-service education needs of teachers and educational personnel. School based in-service education is especially significant in universalizing the provision of in-service education. It is a strategy of teacher development from the grass roots level. It has the promise to motivate the teachers in best possible way. Teacher based in-service education has also significance in its own way in terms of providing necessary motivation, improving the efficiency of in-service education at all levels, and filling the gaps between preparation through pre-service education and the requirement of classroom practices. Hence there is need for reframing and revitalizing professional in-service teacher education and to equip the teachers fully with broad based studies. The course of in-service education and orientation programmes need to be coordinated and integrated in the context of the utility and need of the teachers, time, as well the society.

d. Various Modes of Teacher Education

A variety of modalities can be used in conducting the in-service programmes. Face-to-Face (F2F) and distance learning modes are two important modalities for providing in-service teacher education to teachers. The distance learning modes consist of self-learning instructional materials, learning packages, like books, journals, periodicals, audio and video tapes, slides, films and correspondence courses. Each modality can be designed to serve different purposes. Earlier century is known as ICT era, in 21st century e-teacher education programme concept came into focus, which provides online and offline instruction materials, like computer aided material and computer-assisted material.

i. Face-to-Face Programmes

In face to face programmes, in-service teacher education may take a formal structured form of credit course of a specified duration (leading to certificate/diploma) or noncredit courses of a short term duration or non-credit refresher programmes aimed at updating the teacher through oriented courses, seminars, symposia, workshops, extension lectures, exhibitions or

demonstration. A particular course can be offered for a block period or may be organized on weekly or fortnightly basis for a specific duration.

Seminars/orientation courses/symposia/extension lectures are the programmes generally organized to update teacher's knowledge in different subjects and topics, to develop teaching skills, reshape attitudes and inculcate in them values. These techniques, besides being expensive also involve withdrawing teachers from the schools for the period of training. Workshops/demonstrations/exhibitions are other important means of providing in-service education which are generally organised to develop learning/instructional material and to design curriculum. These techniques provide forum for sharing experiences, promoting individual and group skills for designing curriculum, addressing new problems, and strengthening working relationships in different situations.

The school-based approach provides in-service education on the school premises or on the job. In this mode teachers' needs could be identified more easily and in-service experiences can be devised and related more closely to their needs. Also the resistance to implement the teaching – learning outcomes of these experiences is likely to be less. In view of the fact that face to face mode is inadequate to meet the in-service needs for the entire teaching force, distance education through print media, and multimedia packages seems to be viable and effective approach. Apart from these planned communication in the form of multimedia packages, all teacher education institutions and schools should be strengthened with continued supply of relevant learning material including books and journals. Special programmes need to be organized to raise the self-learning skills of the teachers by the heads of the schools.

ii. Open and Distance Education

Open and Distance education mode used to clear the backlog of untrained teachers already working in institution to update their subject knowledge and teaching skills. It also inculcates acquiring new instructional approaches useful for facilitating optimum learning on the part of learners. These days multimedia approach is being used for in-service education and training of teachers.

In 1975-76, the Satellite Instructional Television Experiment (SITE) made adult education

and community development programmes available in the evening. The INSAT-B launched in 1983 covered programmes for school children in various subjects through Television telecast during school timing. In-service education through research is another recently realized mode to find out solutions to their own problems. It is action research which compels the teacher to think and develop a scientific attitude, objectivity in behavior, motivates to apply research findings and assists to learn what they did not know before. Seminar readings, NCERT experimental projects, self-study, and discussions, conferences, meetings, symposia, group discussions, brain storming sessions, reading of journals, contributing articles/papers in journals and functioning of school complexes also contribute to in-service education of teachers.

Courses for in-service education of teachers needs to be organized in the various areas, such as, liquidation of under-qualified and untrained teachers, sharpening of teaching skills, upgradation of content areas, development of values, working with community, self-study skills among teachers, courses dealing with disadvantaged children, developing reference and study skills among children, and assessing the needs of teachers at different levels.

The success of in service teacher education depends on the quality, ability and competence, personality, and attitudes of resource person. The teacher educators work as resource person in seminars, workshops, demonstrating innovative practicing in schools, give extension lectures, help in action research in schools, act as guest educator in summer institutes, organize exhibitions and fairs, prepare instructional materials. Therefore, all care should be taken in identifying and selecting them on the basis of their academic and extra academic pursuits. Frequent opportunities and facilities should also be provided for their professional growth.

The package has been developed by the NCERT consisting of print material, video programmes and activities in work experience, creative expression, health and physical education. The programme is meant for teachers serving in government, non-government, recognized/aided and minority recognized schools. The programme orients primary school teachers in all subject areas, and secondary school teachers in relevant subject areas.

Doordarshan and NCERT through its Central Institute of Educational Technology (CIET) started using media facilities for in-service education of teachers. The centers of continuing

education in collaboration with State Governments provide in-service education to secondary school teachers and primary teacher educators through modes, like, lectures, discussions, demonstrations and other activities for enhancing knowledge of subject matter as well as orientation in pedagogy to secondary school teachers and primary teacher educators; correspondence courses and contact programmes/tutorials as may be required to supplement in-service activities; consultancy services to teachers; provision of facilities for self-study and institutional materials; and follow-up of the work of participants after the completion of their training.

4. E-Teacher Education

E – Learning could be rightly defined as the learning experiences facilitated through the use of electronic resources and designed to support the development, exchange, and application of knowledge, skills, attitudes, aspirations, and behaviors for the purpose of improving teaching and learning, and consequently increasing students achievement. Knowledge includes information, theories, principles, and research. Skills are the strategies and processes to apply knowledge. Attitudes are beliefs about the value of particular information or strategies. Aspirations are the desires or internal motivation to engage in a particular practice. Behaviours are the consistent application of knowledge and skills. E-learning includes multiple uses of technology to facilitate learning. The uses range from the simple to more sophisticated. Videotape and audiotape are simpler forms of technology-mediated learning. Computer-based learning such as computer-aided instruction and tutorials represent different forms of e-learning. Internet-based learning such as online courses and web-based video conferencing represent still other forms of e-learning. Technology-mediated learning requires more support and resources to ensure effectiveness than the traditional face-to-face teaching learning process. The learning process may include collaboration, inquiry, dialogue and reflection that ultimately seeks to increase the student achievement.

a. Concept and Features of E-teacher Education

Educational systems worldwide insist on using information and communication technologies (ICTs) to teach students who gain the knowledge and skills needed for the future knowledge society (Jimoyiannis and Komis, 2007). E-teacher education would develop in pre-service a positive attitude in preservice teacher towards e-learning and using computers in their future classrooms. E-teacher education is the instructional system of processes and activities designed according to the ICT development, characteristics and models

of e-learning, principles of formal communication, principles of e-education and principles of competence-based education system, etc. E-teaching adopts the constructivist principles in the designing of learning experiences. The concept of co-operative teaching is the fundamental construct to develop e-teaching scenarios.

b. Technology: a Vehicle for Development of Classroom Instruction

Technology can serve as an effective vehicle for the development of academic resources and communication of classroom instructions to learners across the country and at any point of time. This is because, it:

- alters the learning environment. It has the potential to make the learning environment more attractive and conducive to learning.
- provides new structures and media for reflecting, communicating, and translating thoughts into action.
- facilitates modeling and visualization of the learner;
- allows learners for construction and discovery of knowledge;
- expands access to information, networks, people, and ideas;
- increases the flexibility of time and places for learning; and
- provides significant number of academic e-resources.

On the whole technology could be rightly summarized that, it brings the world of learning to the learners, rather than requiring the learners to go in search of the learning aspects and materials.

c. Issues in implementing e-learning in teacher education programme

When considering the implementation of e-learning into the system of education, attention must be paid to the demands to be met at different levels. It is a known fact that the difficulty of implementation varies from primary level to university level. At primary level, e-learning is only a supplement to traditional lessons, while at Teacher Education level tutorials can be made up entirely of e-learning elements. Here are some issues listed down (refer figure 2) in the implementation of e-learning in teacher education programme.

Figure 2: Issues in Implementing e-learning	Result Oriented
	Content Quality
	Content Flexibility
	Flexible Time
	Learner Readiness
	Follow-up Support
	Strengthening Networks
	Use of Technology
	Technical Support
	Interactivity
	Places for Learning
	Cost

i. Result oriented:

It is essential to ensure that results are measured in terms of increased learner achievement. Technology and e-learning modules should be used in such a way that it facilitates the learners in achieving, rather than dissuading them from their goals.

ii. Content quality:

Much is available online; however, not all that is online is of reliable quality. Programme design and course content vary significantly from product to product. Content is most effective or appropriate for the learners when it is linked to school, district, state, and national standards. There should be emphasis on inquiry-discovery, experiential learning such as through, project-based activities or collaborative learning models rather than "drill and kill" learning models as was characteristic of early models of computer-assisted learning. Technology should enhance and support the content, not limit it.

iii. Content flexibility:

E-learning provides the flexibility to design or select the specific content learners need at the moment. Content flexibility allows learners to determine areas in which they want to spend additional time, seek alternative resources, and choose to deepen their own learning in areas of interest or need.

iv. Flexible time:

Traditional formal face-to-face teaching learning – conferences, workshops, courses,

seminars, meetings, consultant presentations, and training sessions take place at a scheduled venue, date and time. If the participants are unavailable at the scheduled venue or time, the opportunity for learning is lost. However, technology makes it possible to extend the opportunity for learning beyond scheduled time. Therefore with e-learning, educators are no longer restricted to scheduled time.

v. Learner readiness:

The needs and preferences for learning media, structures, and processes differ among learners depending upon their past and present environment. Not all learners will be comfortable and successful with e-learning, just as not all learners are successful in a lecture setting. E-learning requires self-directed, motivated, and independent or in other words proactive learners with some competence and comfort in computer literacy and navigation. In addition, learners who have limited or no experience with e-learning may be reluctant to adopt it.

vi. Follow-up support:

Technology facilitates the ways educators can extend their own learning, seek help from others, solve problems associated with implementation, and receive feedback and support from both experts and colleagues. Designing e-learning that incorporates follow-up support would make the teaching-learning process more effective. Technology facilitates multiple structures for ongoing support, collaboration, feedback, and extended learning. When these elements are embedded into the design of e-learning and available over time, participants will likely be more successful in the application of learning. Electronic support is not only for distance education, it can be coupled with face-to-face teaching as well.

vii. Strengthening networks:

Educators learn from other educators. It has often been reported that exchanging ideas and information and solving common problems with those in similar roles is a powerful form of learning. Technology expands opportunities and eases the physical challenges of networking by linking educators anytime, anywhere with others in similar field or roles. These electronic learning teams provide educators a forum for discussing authentic issues, learning from each other's experiences, sharing resources, and coaching or mentoring each other. Virtual networks can substitute for face-to-face meetings while providing the similar advantages.

viii. Use of technology:

Technology can be either slick or substantive. E-learning for educators depends on appropriate use of the available technologies to enhance and facilitate learning rather than making it convoluted and complex. In some ways the technology should be as invisible in the learning process as possible to allow the content and the process of learning to remain in the forefront.

ix. Technical support:

E-learners, especially those new to e-learning, will be more successful if they have access to technical support during the process of their learning. Technical support can be made available in a variety of formats such as online self-help programs, group-chats, e-mail, telephone, web conferencing or web telecast. Access to support in using the technology is important to learners who encounter problems while learning. When problems occur with connectivity, the program, hardware, or learners' capabilities, the more immediate the support, the more likely the learner will continue to participate. Frequent problems can lead to increased dropouts among e-learners especially if there is no provision for efficient technical support.

x. Interactivity:

A leading cause of dropping out in e-learning is isolation among learners and a lack of direction and motivation. Increased interactivity among participants and the instructor through immediate feedback, frequent assessments, shared assignments, and small study teams, will create a cyber-community among learners. When examining programs, products, and services, consumers will want to know, among other things, how interactivity is structured, how often it is expected and it occurs, how easy various communication systems work, and if there is the option for private and public communication within the learning group.

xi. Places for learning:

Learning will become an integral part of the learners if the facilities for learning are readily available, comfortable, and conducive for learning. Educators need a suitable learning environment that provides easy access to e-learning programmes and services; accommodates

individual and small group work comfortably with the technology; meets ergonomic standards; and integrates various technologies. A suitable learning environment improves educators' motivation to access e-learning resources. Individual classrooms and offices equipped to accommodate brief learning episodes increase learners' flexibility and efficiency.

xii. Cost:

Those considering the purchase of online products and services for learning analyze the related costs –not only of purchasing the products, but also of providing the infrastructure necessary to realize their full potential. Infrastructure includes both behind the wall wiring and electricity, as well as hardware and software, technical support, ongoing maintenance, and equipment upgrades. Costs include both financial and human resource investments in e-learning. Greater access to information and increased opportunities for educator learning can both reduce and increase cost. Programs available in market are not necessarily less expensive to purchase or implement than traditional face-to-face leaning; however, they may be more convenient and flexible. While costs for travel, substitutes, facilities, materials, and consultants may be reduced, it is prudent to invest these savings to ensure the availability of the highest quality programs, high speed, stable connectivity, readily available technical support, ongoing job-embedded learning, collaboration, planning, and implementing new practices.

d. Advantages and disadvantages

Advantages of e-learning often include flexibility and convenience for the learner especially if they have other commitments, facilitation of communication between learners, greater adaptability to a learner's needs, more variety in learning experience with the use of multimedia and the non-verbal presentation of teaching material. Video instruction provides visual and audio learning that can be paused, and reversed for watching again. E-learning has huge benefits when compared with organizing classroom training. Some are critical of e-learning in the context of education, because the face-to-face human interaction with a teacher has been removed from the process, and thus, some argue, the process is no longer "educational" in the highest philosophical sense.

The feeling of isolation experienced by distance learning students is also often cited, although discussion forums and other computer-based communication can in fact help ameliorate this and in particular can often encourage students to meet face-to-face and form

self-help groups. Discussion groups can also be formed online. Human interaction, faculty interaction student as well as student, student should be encouraged in any form. The cost-effectiveness of e-learning is a subject of debate as there is usually much upfront investment is required to implement it. Web and software development in particular can be expensive as can systems specifically geared for e-learning. The development of adaptive materials is also much more time-consuming than that of non-adaptive ones. Consequently, some of the cost is often forwarded to the students as online college courses tend to cost more than traditional Courses.

Education is a lifelong and complex process. The pattern of education and its transaction process is changing very fast. A curriculum of latest demand may be outdated in a couple of years due to the fast changing need of society. The quality has become the keyword in the present globe due to globalization, industrialization and liberalization. There is no existence without quality. E-learning is a powerful tool which can achieve remarkable results and magical output. E-learning keeps people at the top of the world. E-learning leverages technology in new and powerful ways to develop enthusiastic, skilled learners and keep them current and operating in peak form. Though e-learning has some disadvantages in terms of inconveniences in installation and cost effectiveness, implementation of the same at teacher education level would serve a lot for the student community, who are the pillars of the next generation.

5. Stage Specific Teacher Education

Teacher education reaches teachers at all levels of education, namely pre-primary, primary, elementary, secondary, higher secondary and the tertiary. The learning needs of students and education vary at each level. Hence, the level and stage-specific teacher preparation is essential. Teacher education also helps in the development of teaching skills among the teachers of professional institutions. The teachers in professional institutions have only the theoretical and practical knowledge of their respective subjects. They require specialized teacher training inputs to deal with students entering their professions. Teacher education also reaches special education and physical education. Thus where there are teachers, there would be teacher education. The knowledge base is adequately specialized and diversified across stages, in order to develop effective processes of preparing entrant teachers for the functions which a teacher is expected to perform at each stage.

It is known that children must be talked as per their level of understanding and provided learning experiences they can process, respond to and make meaning of. There exist significant qualitative differences at various stages of school education, i.e. pre-primary, primary, elementary and secondary, because learning capacities of children at these stages are different. In the context that children change as they grow from one stage of development to another, the corresponding professional competencies needed by teachers to teach at various stages of schooling considerably differ qualitatively, and quite a few of these are unique to a particular stage. Thus teacher education programs have to be stage-specific to be useful and effective. This is not happening in our country. For example, teacher education for middle classes (VI to VIII) is neither covered by B.Ed. nor by primary level teacher training. Stage-specific pre-service teacher education (PSTE) programs should be launched without any further delay. After stage-specific PSTE programme such as M.Ed. (Pre-school), M.Ed. (Elementary) and M.Ed. (Secondary) are launched for teacher educators, the norms and standards in respect of teacher educators should be revised and made stage-specific. For example, M.Ed. (Elementary) should be prescribed as the essential professional qualification for elementary level teacher educators.

6. Teacher Education for all levels- a Common Model

Teacher education is expected to have strong educational foundation-philosophical-sociological-psychological-historical-modern-futurological. It has its own epistemology (theory of knowledge) and knowledge, ontology (nature of existence) and reality, axiology (understanding of ethics) and values. Education has its tools, techniques, pedagogy, approaches, strategies, methods and models. Education has its own treatment right from pre-natal through natal, early childhood, childhood, adolescence, youth, adult, middle age and mature age stages. There is a kernel of congruence from early stages to ripe age, in all the facets of life physical, philosophical, psychological, and sociological. The ultimate aim of education is to realize universal beings, but, there is no end to knowledge. Infant Psychology is different than child psychology. Child Psychology is, of course, different than Adolescent Psychology, Youth Psychology, Adult Psychology, Old Psychology, but, there are sizable commonalities. There is a common human and positive psychology. Concepts become more comprehensive progressively. Knowledge arrays become more complex and challenging. Education ought to develop as the greatest interdisciplinary discipline. Commonalities need to be addressed simultaneously, whereas, unique features may be appreciated separately. The greatest harm to Education has been done by perceiving the various levels in a segregated

compartmentalized way, rather than, interlinked and interconnected. Could we nurture a level independent teacher? The present Teacher Education system seems to be too weak and meek to nurture a universal teacher. Could we nurture a universal teacher cutting across all the Standards, all the School Boards, all the perspectives? Could we evolve a common model of Teacher Education from ECCE to Highest Education?