ICT APPROACH AND ITS ROLE IN PROFESSIONAL DEVELOPMENT FOR TEACHER'S PREPARATION PROGRAMME

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Abstract:-

In the modern age, information and communication technology has influenced all aspects of human life including education .Teacher education has been also influenced by the ICT. ICT is a powerful tool for problem solving, conceptual development and critical thinking that helps to make the learning process much easier for the trainee teacher. Das (2007) remarked that information and communication technology is an important instrument, which can transfer the present isolated, teacher-centred, book-centred learning environment into a rich student-centred environment. Actually the teaching-learning process has been transformed revolutionary with the growing application of ICT and thus the traditional teaching – learning system has been changed into modern ICT based teaching - learning system. Substantiating these trends, today's teaching-learning is being conducted through e-learning, mobile-learning, web-based learning, multi-media learning, etc. In this context the present paper focuses on the role of ICT based approaches in teacher education programme. This paper tries to highlight the integration of ICT in teacher education programme and its importance for the professional development of the teachers.

Key words:-ICT, Teacher Education

Introduction:-

In the modern age , our education system is totally change and upgraded day by day .Teacher education is the importance components of our education system .Teacher education is the backbone of our teaching learning process. Teacher plays importance role of the teaching learning process. The quality of good teaching is totally depending to the quality of teacher .So in this purpose teacher's knowledge and skills are needed to always update day by day. In this perspectives information and communication technology (ICTs) helps to the teacher development his/her knowledge and skills. ICT is a powerful tool for problem solving, conceptual development and critical thinking that helps to make the learning process much easier for the trainee teacher. Actually the teaching-learning process has been transformed revolutionary with the growing application of ICT and thus the traditional teaching – learning system has been changed into modern ICT based teaching - learning system.

Objectives:-

The objectives of the present study is –

- ➢ To define the concept and definition of ICT.
- ➢ Describe the various modern technologies to enhance Development of Teacher's Preparation Programme.
- ➢ State The Various Approaches of ICTs for Professional Development of Teacher's Preparation Programme.
- ➢ To find out the roles of ICT for Professional Development of Teacher's Preparation Programme.

Methodology:-

This present study is based on secondary sources like books, Articles, Journals, Thesis, University News, Expert opinion and websites etc. The method used is Descriptive Analytic method.

Concept and Definition of ICT:-

ICT is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication. Hence IT has become ICT: information and communication technology.

- ➤ **According to Das (2007 :-**remarked that information and communication technology is an important instrument, which can transfer the present isolated, teacher-centered, book-centered learning environment into a rich student-centered environment
- ➤ **According to Blurton: -** Information and communication technology is defined as "diverse set of technological tools and resources used to communicate, create, disseminate, store and manage information".

ICTS and Teacher Education:-

There are varieties of approaches to professional development of teachers in the context box use of ICTs in education. Professional development to incorporate ICTs into teaching and learning is an ongoing process and should not be thought of as one injection of training .teachers need to update their knowledge and skills as the school curriculum and technologies change .Two aims of teacher training are fundamental : teacher education in ICTs ,and teacher education through ICTs .

Teacher Education in ICT:-

The most obvious technique for professional development for teachers is to provide course in basic ICT s knowledge and skills. It is necessary for teachers to become skilled in operating the new technologies and exploiting them effectively as educational tools. Teachers must master the use of ICTs .There need to more emphasis placed on training in pedagogy, as opposed to the current trend in many education systems where the major focus is on specialized knowledge in specific curricular subjects. Teachers must be adequately equipped with more didactic competencies so as to assume their new rols as experts in the learning process.

Teacher Education through ICTS:-

ICTs can support effective professional development of teachers into how to use ICTs. using ICTs as tools for training of teachers is as important as introducing the basics of ICT s to the prospective teachers .As sources of information and expertise,as well as tools for distance communication ,ICTs offer many new possibilities for teacher education .teachers may learn new forms of communication through the regular use of these technologies .use of new media ,new rules of communication – even a new language – have to be learned .

Modern Technologies Used In ICT: -

 The Flowing Modern Technologies Generally Used ICT -

- ➤ **WWW –** www stands for World Wide Web which is one of the most important and widely accepted services (like IRC, E-mail etc.) of the Internet. Its popularity has increased dramatically, simply because it's very easy to use colorful and rich content. According to Dennis P. Curtin (2002): -"Web is a series of interconnected documents stored on computer sites or websites".
- ➤ **E-learning–** E-learning is also known as online learning. E–learning encompasses learning at all levels both formal and non-formal that uses an information network– the Internet, an intranet (LAN) or extranet (WAN). The components include e-portfolios, cyber infrastructures, digital libraries and online learning object repositories. All the above components create a digital identity of the user and connect all the stakeholders in the education. It also facilitates inter disciplinary research.
- ➤ **M- Learning** :- Mobile learning, also known as m-learning, is an educational system. Mobile learning supports, with the help of mobile devices, a continuous access to the learning process.
- ➤ **U- learning :-**It is the combination of two technologies that is e– learning and m- learning .
- ➤ **Group Discussion –** Internet Relay Chat (IRC) is among the popular Internet service people mostly use for live chatting. Group of people with common interest can exchange views / opinions with each other instantly through Internet. Description of the internet technologies required to support education via ICTs (www, video conference, Tele-Conference, Mobile Conference, CD Database, Word-Processor, Intranet, and Internet etc.)
- ➤ **E-Modules –** Modules written are converted and stored into digital version into a computer using word processor accessible by the user through internet.
- ➤ **Teleconferencing –** Teleconferencing refer to interactive electronic communication among people located at two or more different places". There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of technology.
    1) **Audio – Conferencing –** It involves the live (real-time) exchange of voice messages over a telephone network when low – band width text and still images such as graphs, diagrams or picture can also be exchanged along with voice messages, then this type of conferencing is called audio-graphic. Non-moving visuals are added using a computer keyboard or by drawing / writing on graphics tablet or whiteboard.

2) **Video – Conferencing** – Video Conferencing allows the exchange not just of voice and graphics but also of moving images. Video-Conferencing technology does not use telephone lines but either a satellite link or television network (broadcast / cable).

3) **Web – Based Conferencing –** Web-based conferencing as the name implies, involves the transmission of text and graphic, audio and visual media via the internet; it requires the use of a computer with a browser and communication can be both synchronous and asynchronous.

➢ **Blended Learning: -** combinations both face to face learning and other system and electronic based technologies. Here reference can be made to integration of print materials ,broadcasting ,audio – visual aids , supported by tutorial system ,contact classes ,summer schools and other strategies

A Framework for Using ICTS in Teacher Education:-

A holistic framework proposed by the UNESCO (2002) takes into account the factors, e.g. cultural, educational, technology resources that are important in planning the integration of technology into pre-service curriculum. These factors have been discussed below: -

➢ '**Context and Culture'** identifies the culture and other contextual factors that must be considered in infusing technology into teacher curriculum. It includes the use of technology in culturally appropriate ways and the development of respect for multiple cultures and contexts, which need to be taught and modeled by teachers.

➢ '**Leadership and Vision'** are essential for the successful planning and implementation of technology into teacher education and require both leadership and support from the administration of the teacher education institution.

➢ '**Lifelong- Learning'** acknowledges that learning does not stop after school.

➢ '**Planning and Management of change'** is a factors or theme born of today's context and accelerated by technology itself. It signifies the importance of careful planning and effective management of the change process. These factors / themes may be understood as strategic combination of approaches that help teacher educators develop the four core competencies.

The ICT competencies are organized into four groups:-

'**Pedagogy'** is focused on teacher's instructional practices and knowledge of the curriculum and requires that they develop applications within their disciplines that make effective use of ICTs to support and extend teaching and learning.

'**Collaboration and Networking'** acknowledges the communicative potential of ICTs to extend learning beyond the classroom walls and the implications for teacher's development of new knowledge and skills. Technology brings with it new rights and responsibilities, including equitable access to technology resources and respect for intellectual property, included within the 'Social Issues' aspect of ICT competence.

Finally, '**Technical Issues'** is an aspect of lifelong learning theme through which teachers update skills with hardware and software, as new generations of technology emerge.
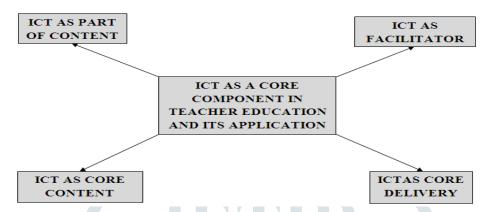
Approaches to ICT Integration in Teacher Education: -

Use of ICT within teacher training programmes around the world is being approached in a number of different ways with varying degrees of success. These approaches were subsequently following approaches: -

1. **ICT skills development approach: -**Here importance is given to providing training in use of ICT in general. Student teachers are expected to be skilled users of ICT for their daily activities. Knowledge about various software, hardware and their use in educational process is provided.

2. **ICT pedagogy approach**: -Emphasis is on integrating ICT skills in a respective subject. Drawing on the principles of constructivism, pre-service teachers design lessons and activities that center on the use of ICT skills in a respective subject. Drawing on the principles of constructivism, pre-service teachers design lessons and activities that center on the use of ICT tools that will foster the attainment of learning outcomes. This approach is useful to the extent that the skills enhance ICT literacy skills and the underlying pedagogy allows students to further develop and maintain these skills in the context of designing classroom – based resources.

3. **Subject Specific Approach**: -Here ICT is embedded into one's own subject area. By this method, teachers / subject experts are not only exposing students to new and innovative ways of learning but are providing them with a practical understanding of what learning and teaching with ICT looks and feels like. In this way, ICT is not an 'add on' but an integral tools that is assessed by teachers and students across a wide range of the curriculum.

4. **Practice driven approach: -**Here emphasis is on providing exposure to the use of ICT in practical aspects of teacher training. Focus is on developing lessons and assignment. Using ICT and implementing it in their work

experience at various levels provides students an opportunity to assess the facilities available at their school and effectively use their own skills.

Thus, ICT in teacher education can take many forms. Teacher can be trained to learn how to use ICT tools. ICT can be used as a core or a complementary means to the teacher training process. The various ways in which ICT teacher training efforts could be classified into four categories as shown in the figure: -

From the above suggested approaches, regarding ICT as a core component at the pre – service level, integration of all approaches would help in developing proper attributes among prospective teachers. There should be joint efforts of educators and prospective teachers in implementing and sharpening ICT skills.

Role of ICT in Teacher Education: -

At present a new era has evolved in the education sector by means of ICTs. Different ICTs are now set to become instrumental to help expand access to teacher education, strengthen the relevance of teacher education to the increasingly digital work place and raise teacher educational quality, helping make teaching and learning into an engaging, active process connected to real life. ICT has a great role in the context of teacher education: -

- ➢ It envisages excitement to the student teacher's eyes, ears and more importantly the head.
- ➢ ICT fulfils the needs of student teachers by providing items and packages of higher standard and interest.
- ➢ It helps in transforming the definition of literacy, learning and knowledge; a definition that increasingly includes multimedia digitized literacy.
- ➢ Multimedia provides a kind of control over the learning environment to the pupil teachers and they experience learning from their failures and I practices.
- ➢ ICT facilitates the student teachers to have control on lesson, pace sequence, content, feedback, which in turn enhances the efficiency of learning.
- ➢ Unlike books, it is interactive in nature and creates motivation and interest among pupil teachers in turn meeting the individual unique needs effectively and efficiently.
- ➢ Develops the ability of self learning and interacting individually.
- ➢ ICT helps in implementing ICT driven distance education programmes where the teachers are given new opportunities for acquisition of a new knowledge.

Thus, ICT is a powerful new development with ambitious role in teacher education, Digital and Internet based multimedia transforms the present day.

Conclusion:-

Teacher occupies a honourable position in the society. ICT helps the teacher to update the new knowledge, skills to use the new digital tools and resources. By using and acquired the knowledge of ict, student-teacher will become effective teachers. ict is one of the major factors for producing the rapid changes in our society. it can change the nature of education and roles of students and teacher in teaching-learning process.

Teacher in india now started using technology in the classroom laptop, lcd, projecter, desktop ,educom ,smart classes , virtual classes, memory sticks are becoming the common media for teacher educational institutions. so we should me information and communication technology in teacher education in professional development for teacher education programme.

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