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Information and Communication Technology (ICT) in Teacher Education

*1 Dr. Pooja Nag

*1 Assistant Professor, Department of Education, Dr. C.V. Raman University, Kota Bilaspur, Chhattisgarh, India.

*Corresponding Author
Dr. Pooja Nag
Assistant Professor, Department of
Education, Dr. C.V. Raman University,
Kota Bilaspur, Chhattisgarh, India.

Abstract

The primer purpose of Information Technology are defined as a "diverse set of Technological tools and resources used to communicate and to create disseminate store and manage information" these technologies include computers the Internet broadcasting Technologies and telephone now days the rule of Information and Communication Technology (ICT) especially Internet in the education sector plays an importance role especially in the process of empowering the technology into the educational activities education sector can be the most effective Sector to anticipate and eliminate the negative impact of ICT. Technology, on the other side can be the most effective way to increase the students knowledge being aware of the significant role of ICT (Internet) in our life, especially in the educational activities education authorities should be wise enough in implementing the strategies to empower ICT in supporting the teaching and learning process in the classroom ICT is not just the bloom of the educational activities but also the secondary option to improve the effective and meaningful process the main purpose of the strategy for Information and Communication linear implementation in education is to provide the process and trends of integrating ICT into the general education activities. Information and Communication Technology (ICT) has become an indispensable component of modern education systems across the world. In teacher education, ICT plays a crucial role in transforming traditional teaching practices into innovative, learner-centered, and technology-driven approaches. The integration of ICT equips teachers with digital competencies, pedagogical flexibility, and professional skills required to meet the demands of 21st-century classrooms. This research paper explores the concept, evolution, objectives, importance, scope, and impact of ICT in teacher education. It also examines the role of ICT in pre-service and in-service teacher education, highlights major challenges in ICT integration, and suggests strategies for effective implementation.

Keywords: Information, Communication Technology, Teacher Education…..etc.

Introduction

ICT is used in various Business and Management functions, but not in improving the quality of education quality of education has been an issue of concern in the absence of standard parameters to measure the quality. hardware, software, the methods and knowhow requested or used in acquiring, storing, processing and displaying data and information is collectively known as Information Technology (IT) also on the other hand money developments and achievements took place in communication technology seat after the second world war hardware knowhow programs and the methods used in ensuring that message is transmitted correctly efficiently and cost efficiently are collectively known as Communication Technology (CT) both of these Technologies become complementation to each other which means progress in one Technology alone is not much

beneficial hence IT and CT start moving together and a new term was coined named as Information and Communication Technology (ICT) convergence of these Two Technologies gave birth to ICT

Meaning and Definition of ICT

ICT stands For information and communication Technologies ICT refers to Technologies that provide access to information through telecommunications it is similar to information Technology (IT) but focuses primarily on communication Technologies this includes the Internet, wireless, networks cell phones, and other communication medians.

In the past few decades information and communication Technologies have provided society with a vast array of new communication capabilities, for example, people can communicate in real-time, with others in different countries

evening Technologies such as instant messaging, voice over IP and video-conferencing social networking websites like Face book allow users from all over the world to remain in contact and communicate on a regular basis.

Modern information and communication Technologies have created a "global village" in which people can communicate with others across the word as if they were living Next Door for this reason, ICT is often studies in the context of how modern communication Technologies effect society.

Purpose and Aims of ICT in Education

The word of ICT is the observation of information and Communication, Technology so it's AIMS are -

1. To make the process of communication easy and interesting with the help of Technologies.
2. To give new dimension of communication.
3. Accessibility of information etc.

The Following are the Aims and Objectives of ICT Implementation in Education

1. To help the learners became competent and confident uses of ICT who can make efficiently effective and creative use of basic application software in there everyday activities
2. To facilitate better communication between the understanding learners those by promoting greater social understanding and harmony
3. To help the learners become cultured citizens of the modern world by facilitating the discovery and appreciation of the creatural heritage of various countries around the world.
4. To encourage the learners to level up the appropriate personal skills that are essential for independent leaving based around ICT

Scope of ICT in Education

Effective learning is possible by five sensory means according to physiological study human can grapes 18% knowledge visually 15% through hearing 5% with the rest of the sensory items

So it becomes necessary to press the content by attractive means Computer technology helps us to provide rich presentation, to provide which presentation it is necessary to use the various components like. Text matter presentation animation presentation graphic presentation Audio presentation video presentation

Computer Aided Teaching has Become Popular Now a Days

Publication

1. The notes printed text book can be digitized with the help of Computer technology.
2. Many e books are available on websites developed by different publisher.
3. Encyclopedia is also available on Internet.

Evolution

Online test => results => feedback => software => progress reports.

Research

Search engines
E libraries
Internet Wikipedia

Administration

Employees register library record dead stock register progress reports students register placement call Alumni record School campus record finance and accounts time table

ICT and ITS Application for Optimizing Learning Outcomes: Some ICT

Supported learning applications are discussed below:

1. **Active Learning:** ICT enhanced learning mobile is tools for examination calculation and analysis of Information this providing a platform for student enquiry, analysis and construction of new Information learners therefore learn as they do and whenever appropriate work on real life problems in depth making learning less abstract and more relevant to the learners life situation in this way and in contrast to memorization base or Rote learning ICT enhanced learning promotes increased it learn engagement ICT enhanced learning is also "just – in – time" learning in which linens can chose what to learn when they need to learn it
2. **Collaborative Learning ICT:** supported learning encourages interaction and Corporation among students, teachers and experts regardless of where they are Apart from modeling real word interaction ICT supported learning provides learners the opportunity to work with people from different cultural there by helping to enhance learners teaming and communicative skill as well as their Global awareness. IT d models learning done throughout the learners lifetime by expanding the learning space to include not just appear but also mentors and experts from different field.
3. **Creative Learning ICT**: supported learning promotes the manipulation of existing information and the creation of real words products rather than the regurgitation of received information.
4. **Integrative Learning:** ICT- enhanced learning promotes a thematic integrative approach to teaching and learning this approach eliminates the artificial separation between the different disciplines and between theory and practical that Characterizes the traditional classroom approach
5. **Evaluative Learning ICT:** enhanced learning is a student directed and diagnostic unlike static, text or print best educational Technologies ICT enhanced learning recognize that there are many different learning Pathways and many different agriculture knowledge ICT allow learners to explore and Discover rather than Merely listen and remember

Conclusion

For developing countries ICT have the potential for increasing access to and improving the reverence and quality of education and powerful tool for extending educational opportunities both formal and non-formula to previously under saved constituencies, research has shown that the appropriate use of ICT can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the 21st century. if designed and implemented properly ICT supported education can promote the acquisition of the knowledge and skill that with empower student for life-long learning when used appropriately ICT especially computers and Internet Technologies enable new way of teaching and learning rather than simple allow. Information and Communication Technology has become an integral part of teacher education in the digital age. It enhances the quality, relevance, and effectiveness of teacher training programs by

promoting innovative pedagogy, professional development, and inclusive education. Although challenges exist, strategic planning, capacity building, and policy support can ensure effective ICT integration. Teacher education must continuously adapt to technological advancements to prepare competent teachers capable of meeting the diverse needs of learners in the 21st century.

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