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Role and Significance of Information and Communication Technology in Teacher Education

ORIGINAL ARTICLE

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Abstract

Information and Communication Technology brings dynamic changes to society. They affect all areas of life. Its influence is increasingly felt in schools. As ICT offers both students and teachers the opportunity to adapt learning and teaching to their individual needs, society is forcing schools to respond appropriately to this technological innovation. Teacher education institutions face the challenge of preparing a new generation of teachers to effectively use new learning tools in their teaching practice. Teacher educational institutions should therefore consider the use and application of ICT in their programs. Curricula need to be restructured to include key components of ICT. ICT is therefore not a substitute but a powerful tool for teachers and learners. ICT can be a vehicle to pave the way to excellence. This paper aims to highlight the role and importance of information and communication technology in teacher education systems.

Key Words

Information and communications technology, Teacher Education, E –Learning.

Introduction

Information and communication technology (ICT) has ushered us into a new world. This world is now called a small village. Quick and easy access to knowledge has given us the opportunity to develop further. It affects almost every field, including education. But education, which itself is called the process of communication, has not yet adapted to the highest and optimal level of information and communication technology possible. Especially in higher education there is a need to deepen concepts and develop visualization.

A UNESCO report (1996) states that learning 'brings the world into the classroom'. Teacher education must also provide a pedagogical perspective beyond utility in order to make the main functions of teacher education globally competitive. The most appropriate approaches are named as follows:

- **E-Learning:–** An approach to facilitate and enhance learning using devices based on both computing and communication technologies. E-learning can also be used to support distance learning.
- **Learning with Multimedia:** Multimedia has the potential to transform traditional teaching methods. It helps teachers to present in a more meaningful way, using a variety of mediums that are more effective compared to traditional teaching methods. The expectations and responsibilities of teachers seem endless.

Efforts should be made to use information technology to update knowledge and skills and to instill social and ethical values.

- **Computer-assisted learning:** This is the process of using computers and computer programs to aid student learning. Using the CAL program, students are given the opportunity to perform our experiments.

Literature Review

Dhawan, (2020) stated a contemporary study of the changes impacted on the Indian education sector due to the pandemic. The authors say that online learning or e-learning is not very popular in the Indian education sector and many educational institutions have been forced to practice online learning due to the pandemic. In this paper, we have reviewed his SWOC analysis of e-learning mode. Online classes have many problems such as: Connection problems, low student engagement, difficulty understanding instructions. In addition to all these problems, online learning has many benefits.

Kundu & Dey, (2018) conducted a contemporary survey of e-learning scenarios flourishing in India. The term e-learning includes various terms such as online learning, web-based learning, and technology-enhanced learning. The development of the internet or digital technology has enabled the education sector to communicate and provide learning resources to learners in remote locations. There are various developments related to e-learning in India such as MOOCs, E-Gyankosh, NODLINET, establishing his ICT e-learning centers in 204 schools in Srikakulam district, Andhra Pradesh. Although unlikely to replace traditional learning, e-learning has a bright future in India. These two aspects must work together to be intrinsically effective. Content, delivery and access will be the three key agents shaping online education in India.

Girish & Sureshkumar, (2017), in their study ICT in Teaching and Learning Processes in Higher Education: Challenges and Opportunities, focused on the challenges and opportunities for implementing ICT in the classroom for teaching and learning processes. They also highlighted situations that need to be transformed in order to realize the full potential of ICT programs for better teaching and learning. They found challenges such as high cost, lack of basic infrastructure required for the complex operation of ICT-enabled learning tools, and inability to meet basic needs such as power.

Ghavifekr, Kunjappan, Ramasamy & Anthony, (2016) focus their research on the problems and challenges teachers face in integrating ICT into their teaching and learning processes. Her challenges in using ICT tools while teaching in the classroom proved to be highly influential. There are certain barriers that are external in nature, such as lack of resources, time, access, and technical support. Teachers used her ICT tools to demonstrate and present content and track student progress. Barriers must be addressed by policy makers and administrators to improve student learning outcomes.

According to Sawant, (2015) "Using ICT in Teaching, Learning and Assessment" argued that the use of all kinds of ICT tools in classroom teaching can help stimulate students' interest in learning. Teaching, learning and assessment are the foundations of the education system. The author illustrated the use of ICT integration by adapting her ICT integration to language subjects that had a positive impact on students' learning abilities. Facilitating collaborative learning, saving time, group discussions, or preparing seminars are some of the areas that can be relatively used to improve the quality of learning and increase knowledge.

According to Pegu (2014) stated in his study that the penetration of ICT programs in higher education is low and that language differences require content to be created in local/regional languages. Moreover, there are so many opportunities as these programs are likely to efficiently deliver the expected learning outcomes.

Latest Inclination in Teacher Education

Based on the different and changing needs of our society, there is now also a focus on different educational theories and practices. Following these theories and his practice, teacher education is also changing. Needless to say, teacher education must include his new techniques. Teachers must know the right

attitudes and values in addition to their ability to teach. As you know, the minimum requirement for any training program is to enable the trainee to acquire the basic skills and competencies of a good teacher.

Today, new trends in teacher education include interdisciplinary approaches, distance learning and orientation courses. Simulated education, micro-education, programmatic education and team education are also used in teacher education.

Action research is now being conducted in teacher education as well. ICT acts as a gateway to her information world and helps teachers stay up to date. Recognizing his innovative tendencies in teaching methods, assessment mechanisms, etc. for Professional Development.

Objective

- To study the role of ICT in Teacher Training Studies.
- To examine the importance of ICT in teacher education.
- To provide some suggestions for teacher training.
- To examine how to improve Quality of education.

Research Methodology

Researchers employed a descriptive methodology for this study. Studies were placed in secondary data sources such as books, magazines, newspapers and online databases.

Information and Communication Technology in Teacher Education

Professional development to incorporate ICT into teaching and learning is an ongoing process. The Teacher Education Curriculum must update these knowledge and skills as the School Curriculum changes. Teachers must learn to teach using digital technology, even if many of them have not been taught how to do so. The goal of teacher education in this regard is either teacher education with ICT or teacher education with ICT. Teacher professional development is central to the entire process of change in education. They are unsure how to best use his.

ICT as a powerful and diverse resource with the potential to transform the traditional teacher-student relationship. To invest time and effort in adopting technology, teachers need to understand and experience the potential benefits of using ICT. In addition, they should have access to evidence supporting improved teaching and learning, including case studies and examples of effective practice. Achieving the necessary educational change requires strong leadership and support, as well as a school development plan for technology integration. They also need technical support to make them feel comfortable using the technology and more willing to experiment. The Future Lab study looked at a number of UK case studies on teacher education and found many positive results. Although not representative, most of these studies highlight the positive effects of using ICTs for teacher education, such as supporting online teacher communities. 'Talking Heads Online Community Pilot 'Study showed that informal online communities reduce school leader isolation and enable school leaders to gain and share insights on school improvement practices.

Significance of Information and Communication Technology in Teacher Education

ICT supports teachers in both teacher development and teacher development:

- ICT helps teachers interact with students.
- Help prepare lessons and provide feedback.
- ICT also helps teachers to access educational institutions and universities, NCERT, NAAC NCTE, UGC and so on.
- Improve teaching skills, help innovative teaching.
- Increase the effectiveness of education.

- It also helps improve professional development and educational management and enhances active learning in future teachers.
- Replaces old technology. As we know now, one day students will always be competitive. Therefore, teachers should have knowledge of the subject. This can be achieved through ICT.
- ICT helps teachers prepare for lessons. Various methods and strategies are used to introduce her ICT in teacher education.
- Various tools such as word processors, databases and spreadsheets are used.
- A variety of technology-based plans are used to assist teachers in hands-on instruction.
- ICT prepares teachers to use their skills in real classroom situations and prepares students for their future careers and social lives.
- ICT as a teaching and learning medium. It is itself a tool for teaching and learning, a medium for teachers to teach and learners to learn.
- ICT as a general tool for organization and management in institutions.
- Teachers should provide technical support for student learning using film, animation, and simulation training to help the teacher create a model her presentation.
- Remove traditional teaching methods and allow teachers to apply modern teaching methods.
- ICT plays an important role in student assessment.
- ICT is the warehouse of educational institutions because all educational information can be stored securely by ICT.
- ICT helps teachers to communicate properly with students. This is how ICT bridges the gap between teachers and students.
- ICT assists teachers with organizational requirements (vision, politics, culture).
- It also helps teachers with personal support (knowledge, attitudes, skills).
- ICT (Infrastructure) to serve technical requirements.
- ICT serves designed learning situations required for both vocational education and training of future teachers (at teacher educational institutions).
- Teacher training institutions can use ICT to develop curriculum.
- With the help of ICT, teacher training institutions can build communication networks.
- Teachers learn most from their own networks (learning from others) with the help of ICT.

Proposal

Some suggestions for new approaches in teacher education:

- New methods of research, experimentation, project discussion and problem solving should be used more and more.
- By using ICT in teaching, teachers establish a direct link with student learning and aim to improve student performance.
- Teachers must take on their new role as facilitators and guides, rather than mere lecturers and trainers. The use of technology in methods can accelerate the efficiency of educational tasks.
- It is therefore desirable to look for ways in which knowledge can be shared more effectively.
- These innovative ideas must be introduced into teaching methods to meet the needs and demands of society.

Conclusions

The Survey as a Whole All teacher training institutions should be provided with computers and other suitable infrastructure. Administrative support for using new technologies. Teachers and schools face many challenges, including infrastructure issues such as lack of electricity, telephone and internet access that hinder the effective use of ICT in teaching and learning. Schools also struggle to optimize their use of technology due to lack of proper professional development. Many teachers have mastered basic computer skills, but are still not confident enough to use the technology to increase productivity and effect educational change in. At the same time, ICT managers and leaders are demanding more support in her ICT integration in technology management and organizations. Such support is needed to align the goals of the ICT initiative with the goals of overall school development.

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