

Integration of ICT in Pre-Service Teacher Education: an Urgent need for Quality Education

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Abstract

The teacher is one of the most important factors in the field of education. The quality and efficiency of education depends on quality of teacher. Before the introduction of information and communication technology, he was regarded the sole dispenser of knowledge. But in the present scenario we are seeing that Information and Communication Technology (ICT) presented new ways of working in the field of education. With ICTs both the teachers and students can access information. ICT also, brought with it new skills and methods of teaching and learning processes. Knowledge of ICT and skills to use ICT has gained immense importance for today's teacher. So, for the teacher to remain relevant in this new information age ICT must be integrated in their training for quality education. Therefore, this paper focuses on the integration of ICT in pre-service teacher education for enhancing quality education.

Keywords: ICT, Teacher Education

1. Introduction

In the modern age, information and communication technology has influence all aspects of human life. Teacher education has also been influenced by the ICT. Now ICT has become an integral part of our lives. ICT is a powerful tool for problem solving, conceptual development and critical thinking that helps to make the learning process much easier for the teacher trainees. Owing to knowledge explosion and tremendously fast changing ICT, the teachers sometimes find it rather difficult to cope with the new intellectual challenges being thrown up by the changed global and local context. Therefore, updating the knowledge of ICT is the need of the hour. Even though teachers may have mastered the traditional pedagogies in teaching their students; the changing world dictates that these are no longer sufficient. So the integration of ICT in teacher education is must for enhancing quality education before they can prepare their teacher trainees to meet the demands and challenges of the 21st century.

2. Concept of Information and Communication Technology (ICT)

ICT stands for "Information and communication technology". It refers to technologies that provide access to information through telecommunication. It is similar to Information Technology (IT) but focuses primarily on communication technologies. This includes the internet, wireless networks, cell phones and other communication mediums. It means we have more opportunities to use ICT in teacher training programmes now days and

improve quality of teacher for teach effectively. According to UNESCO “ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters”.

3. ICT in Teacher Education

Teacher is the main part of the educational field in our society. He more works for the improvement level of our society in the every field. Skilled teachers can make the creative students in form of the good social worker, politician, poet, philosopher etc. for the society. Teachers can play a friendly role with the learner. Duty of the every teacher that, the learners could learn with individually and without any unnecessary outer pressure and fear. Recognizing the impact of ICT on the workplace and everyday life, today’s teacher education institutions should try to restructure their education programs and classroom facilities, in order to minimize the teaching and learning technology gap between today and the future. New technologies have provided new possibilities for the teaching profession. However, teacher educators and teacher trainees have to learn how to use these new technologies in the classroom situations. Most of the teacher education institutions are facing difficulties like shortage of ICT trained qualified teacher educators, weak curricula, lack of ICT equipment etc. Perhaps one of the greatest challenges facing teacher education today concerns the preparation of good quality teachers capable of using ICT effectively. Unless and until they are trained we cannot expect any qualitative changes in teaching.

4. Problems in Integration of ICT in Teacher Education:

These are certain basic problems associated with the integration aspects of technology. These are major hurdles in the integration of ICT in the teaching learning process. This scenario shows that the objectives of introducing ICT at the pre-service level are developing technological knowledge and awareness regarding various other technologies and software packages. Further, the time spent for practical sessions is less, as more time is spent for theory sessions. The total approach of introducing ICT at the pre-service level is not very serious. It is very clear that student teachers will not get much scope in order to integrate ICT in curriculum or the teaching learning process. In teacher training programs at the secondary level, the ICT education scenario is struggling with the following problems: Only at the awareness development level are objectives being achieved, but higher order thinking skills regarding the use of ICT tend not to be occurring.

(A)Technology, pedagogy and content area integration is not practicing. All components are dealt with separately which creates confusion among the teacher trainees.

(B)There is a serious discrepancy among syllabi of teacher training institutions and secondary schools. Syllabi at various institutions are not on the basis with school level curriculum.

(C) Time duration of the courses related to ICT education is too short to develop knowledge and necessary skills among student's teachers to achieve higher order thinking skills.

(D) There is a lack of availability of proper infrastructural facilities at most of the institutions.

(E) There is a mismatch between available hardware and software to develop required learning resources.

5. Approaches to ICT integration in Teacher Education:

The recent rise in epidemics and pandemics necessitates that we are ready with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible. In this regard, the National Education Policy 2020 recognizes the importance of leveraging the advantages of technology while acknowledging its potential risks and dangers. It calls for carefully designed and appropriately scaled pilot studies to determine how the benefits of online/digital education can be reaped while addressing or mitigating the downsides. In the meantime, the existing digital platforms and ongoing ICT-based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education for all.

a. 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.

b. 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 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.

c. 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 tool that is accessed by teachers and students across a wide range of the curricula.

d. 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 assignments. 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.

6. Conclusions:

Teaching occupies an honorable position in the society. ICT helps the teacher to update the new knowledge, skills to use the new digital tools and resources for enhancing quality education. By using and acquire the knowledge of ICT, student teacher will become effective teachers. ICT is one of the major factors for producing the rapid changes in the field of education. A well-designed teacher training program is essential to meet the demand of Today's teachers who want to learn how to use ICT effectively for their teaching. Given the fast development of ICT, we can expect that ICT will bring changes in forms of teacher training throughout the world. So, from the above discussion we can conclude that integration of ICT in teacher education much needed for enhancing the quality education.

References:

- Bharadwaj.A.P. (2005). Assuring Quality in Teacher Education”, University News, Vol. 43. No.18.
- Dahiya,S.S.(2005). ICT-Enabled Teacher Educator, University News, 43
- Gupta.M.M. 2015. conduct a study on “*attitude of prospective teachers towards the use of information and communication technology (ICT) in teacher education*”Int. J. Scientific Res. Eng. Tech. (IJSRET) ISSN: 2278–0882, 14-15 March, 2015.
- <http://www.ncte-in.org> - *Information and Communication Technology Literacy (Curriculum for Teacher Education)*
- National Curriculum Framework (2005), National Council of Educational Research and Training, New Delhi, India Curriculum Framework for Teacher Education 2006, Council for Teacher Education
- NCTE (2002). ICT initiatives of the NCTE Discussion Document. New Delhi: National Council For Teacher Education.
- National Education Policy NEP(2020)
- Paily,M.U. (2006).*Integration of information and communication technology in teacher education*.Edu Tracks, 6(12).
- Senapaty,H.K.(2004).*Integrating Digital Technology into Constructivist Learning Environment*. International Conference held at Saurashtra University, Rajkot, and Gujarat, India
- UNESCO(2002). Information and Communication Technologies in Teacher Education, A Planning Guide. Paris: UNESCO.page 109-114 May 2-8.
- Wadhvani,R. D. (2016). Encyclopedia of Information Science & Technology