Enrich, XII(II): 39 - 44 , Jan – June, 2021

Integration of ICT in Teacher Education

[1] M. Vijayalakshmi, [2] D. Radhika , [3] P. Ulagammal
[1] Assistant Professor, Department of Zoology
A.P.C. Mahalaxmi College for Women, Thoothukudi
[2] Assistant Professor, PG & Research Department of Zoology
V.O. Chidambaram College for Women, Thoothukudi
[3] Assistant Professor, PG Department of Commerce
A.P.C. Mahalaxmi College for Women, Thoothukudi

Abstract

Educational institutions all around the world have been under pressure to integrate modern information and communication technologies (ICT) into teaching, learning, assessment, research, administration, and professional development. Assessing the information, skills, and essential prerequisite of the young generation to compete in an incredibly sophisticated technological world, this increased emphasis is necessary. Without a doubt, information and communication technologies (ICT) have created several difficulties and opportunities for education. Even outside the classroom, technological advancements have brought about a revolution. Learners have become WWW afflicted as a result of information technology. This is because technological advancements have impacted society in two ways: first, by boosting human capacities and allowing people to actively participate in social, economic, and political life. Second, by highlighting technical innovation as a means of human growth and consequently of greater resources with overall success.

Introduction

The teaching profession is transitioning from teacher-centered, lecture-based instruction further towards student-centered, interactive learning settings as new technologies emerge. For today's instructors, ICT knowledge and skills in using ICT in teaching and learning have become extremely important. Teachers must be able to successfully incorporate ICT into their subject areas for learning to be more relevant. The notion that exposure to ICT during this time helps increase student teachers' willingness to integrate technology into classroom teaching has given this knowledge development during teacher education programs a lot of weight. This paper focuses on challenges surrounding the use of ICT as a core component of teacher education. Teachers' views about the integration of ICT and their self-efficacy have been evaluated. Various techniques for incorporating ICT into teacher education programs have also been proposed, which would assist instructors in applying technology in educational contexts.

The trademarks of the entrepreneurial century include the expansion of knowledge, the communication revolution, technological advancement, the application of science to all parts of life, and, above all, rising societal ambitions. At the same time, the mind is contemplative,

analytical, visionary, global, integrative, and synergic. As a result, education and training must be prioritized, and because instructors play such a vital part in a child's education, they must be regularly trained and their minds updated while being pragmatic and practical. They must place a premium on lifelong learning, as well as learning for and through life. They must receive ongoing training and retraining to play their roles more effectively and meaningfully.

The educational institutions are under pressure to integrate information and communication technology (ICT) with teaching, learning, evaluation, research, administration, and professional development. Preety Agarwal (2016) shows the justification of the knowledge, skills, and competencies required by the young generation to survive the progressively sophisticated technological world. Certainly, ICT has brought about many challenges and opportunities in the field of education. ICT will also require a modification of the role of the teacher with classroom training to include other skills and responsibilities. Many will become specialists in the use of distributed learning techniques, the design and development of shared working spaces and resources, and virtual guides for students who use electronic media. Ultimately, the use of ICT will enhance the learning experiences for children, helping them to think and communicate creatively. If educational institutions as confident individuals capable of using new technology creatively and productively then their teachers should have the technologies and the digital content with all their operations.

The educational system needs new challenges and takes full advantage of the opportunities.

- Competency and performance–based curricula
- Student-centered learning
- Supporting knowledge construction
- Any place and any time learning
- Expanding the pool of teachers and students
- Enhanced group collaboration
- Supporting non-formal education for out of school children and adults
- Supporting pre-and in-service teacher education
- Enhanced educational management
- Online learning utilizing video conferencing, discussion forum, chat, blogging, etc.,
- Attending ICT training courses, seminars, conferences, and workshops.
- Coaching by a colleague – mentoring
- Action research – trying out various models of technology integration and publishing the result of the same.

Impact of ICT on Education

- **Faster Communication speed:** News or messages are sent via e-mail to friends, to anyone efficiently. Any information can travel fast and direct to save time.
- **Paperless Environment**: This means information can be stored and retrieved through digital mediums like e-mails, Google classroom, online and instant messages instead of paper.
- **Borderless Communication:** This offers fast information retrieval, interactivity, accessibility, and versatility. This has become a borderless source for services and information.
- **Reliable Mode of Communication:** The dependable approach of transforming information in computers is the reliable mode. It could be accessed and retrieved from anywhere and at any time. People can share and exchange opinions, news information through discussion groups, mailing lists, and forums on the internet. It will contribute to the development of a knowledge-based society.

ICT Infrastructure

One of the most critical elements of technology integration is the infrastructure that supports the network and provides the connectivity and communication capabilities in computers. Such a networked ICT infrastructure should be designed to meet not only the current needs but also have sufficient capacity to meet future requirements. When networking within and between the institutions, it is worthwhile to consider Smart Valley's technical guidebook.

ICT Center

The ICT provisions in the institutions are changing very rapidly and as the cost of equipment, such as LCD projectors, camcorders, and digital cameras at low cost are likely to see a growing amount of sophisticated technological equipment in the classrooms. Hence, the teacher trainees must have the competence in using these devices productively. Each institution must establish one ICT center where state-of-the-art technology should take place. This is to be used by the teacher educators to demonstrate to the trainees, what the technology can offer for the teaching-learning process including various ICT integration approaches. This would also serve as the in-service training center where the teacher would be trained to use all hardware available and also the demonstration of ICT-based lessons.

ICT Training Inputs For Teachers (Pre-Service and In-Service) And Teacher Educators

It is imperative that all stakeholders in the education industry, from foundation to post-graduate, collaborate with teacher education institutions to make pre-service teacher training modern and international. While there is little evidence that teachers are being trained to teach

with technology, some studies suggest that participating in educational technology activities during pre-service teacher. Deepa Bisht (2013) explains that the training for teachers has benefits such as developing professional knowledge of instructional media and technology, increasing graduating teachers' willingness to integrate it into their classroom curricula, and encouraging the formation of learning communities for focused learning. Although the younger teachers are digital natives, they must have prior experience in the sector to comprehend how to apply their technical expertise to their vocation.

In truth, most teachers are not adequately prepared to use technology in their classrooms. The best method to prepare instructors for ICT-based instruction is to let them do it. Technology-supported learning experiences that promote and enable the use of technology to improve learning, assessment, and instructional practices should be provided by all institutions participating in educator preparation. To transform what and how they educate, teacher educators will need to draw on developments in learning science and technology. Volman 2005 exposes the same requirements that apply to teacher preparation continued professional development with awareness phase, Learning theories and technology integration, basic hardware skills. Understanding system software with applications and using the multimedia & internet for the teaching process.

Type of ICT Tools Available

Synchronous

- Skype
- Audio conferencing
- Video conferencing
- Google Hangout
- Messengers

Asynchronous

- Email
- Blogs
- Google Classroom
- Wikis
- NewsGroups
- RSS Feeds
- Discussion Forums
- Discussion Groups

Computing Tools

- Word Processing

- Spreadsheets
- Presentations
- Database management

Learning Management Systems

- Moodle
- Joomla
- Sakai
- Autor
- Web Study
- Canvas

Knowledge databases

- Online Encyclopedia
- Online Libraries
- Online journals
- Online magazines
- Online documents/reports

Initiative Competencies of Training Teachers

Every educational institution must recognize the necessity of providing instructors with the necessary tools to assist them in meeting the new problems that they will encounter in their classrooms. Teachers play a significant role in the successful adoption of ICT in the educational process, according to UNESCO (UNESCO 2008c). This implementation will be dependent on teachers' ability to structure the learning environment in nontraditional ways, to merge new technology with new pedagogy, to create socially active classrooms that encourage cooperative interaction, collaborative learning, and group work. The requirement for faculty to be trained in ICT issues and advises that educators address the pedagogical shifts that have resulted from the introduction of the knowledge society, which includes the use of ICT. The following are the skills that people, instructors, and students need to face the difficulties of the knowledge society. Self-learning using the tutorials available on the net, hiring an ICT expert by a group of teachers/ teacher educators, enrolling for the best commercially available ICT training program are the initiative competencies.

Condition in ICT

The pupil-teachers should develop the concept of "techno pedagogy." The level of ICT proficiencies among the educators should be at the advanced level. In terms of the level of the ICT integration process, the Educators are to be in an adaptive category. Essential conditions of

ICT are skilled educators, technical assistance, student-centered teaching, community support, and assessment. Now a day's development of technology will ensure that ICT will proliferate in the classroom. From the points discussed above, it can be concluded that the ICT resources can facilitate the teaching and learning activities. The educators therefore should be dedicated and spend most of their time on informative, communicative, and expressive activities.

Conclusion

The goal of integrating ICT at the pre-service level is to generate techno-pedagogues rather than technocrats. Teachers should be able to integrate technology into teaching and learning while also honing their web skills. As a result, rather than focusing on information and comprehension, objectives should be set at the application and skill levels. Teachers' professional development must be prioritized. At the secondary level, there must be alignment between the school curriculum and the teacher training curriculum. Thus, teachers will be unable to properly construct teaching/learning activities, project work, and assignments using their knowledge. Integrated approaches must be studied alongside methodologies courses, in addition to delivering ICT as a compulsory and particular course.

References

- Preety Agarwal (2016), Integrating ICT in Teacher Education, IJEAR Vol. 6, Issue 1, Spl-1, ISSN: 2348-0033 (Online) ISSN: 2249-4944 (Print).
- S.Pradeep Gnanam, S.Vetrivel and Bhupathi Raju Venkata Rama Raju (2016), Approach for Integrating ICT in Teaching-Learning Process, International Journal of Trend in Research and Development, Volume 3(5), ISSN: 2394-9333 www.ijtrd.com IJTRD. Available Online@www.ijtrd.com 153.
- Mishra (2008), Teaching of information technology, New Delhi;APH Publishing corporation.
- Mameta Das (2005), "ICT Enabled Teacher Education" Edutracks, vol.5, No.1. pg 15-16,
- S.K. Thakur (2008), "X-PDITTE Towards Excellence in education" Intel teach Programe.
- Deepa Bisht (2013), Integration of ICT in Teacher Education for Enhancing Competency Based Teaching, Techno LEARN: 3 (1): 1-10. June, 2013
- UNESCO 2008c. "ICT Competencies standards for teachers. Implementation guidelines". http://unesdoc.unesco.org/images/0015/001562/156209E.pdf
- Volman, M. 2005. A variety of roles for a new type of teacher Educational technology and the teaching profession. Department of Education, Vrije Universities, Teaching and Teacher Education v.21