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ICT and professional development of teachers

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Abstract

This paper examined the role of ICT in improving the quality of teacher education that can transfer the teacher centered and book centered learning environment into a student centered environment. ICT can change the traditional methods of learning process and the models of ICT should be integrated in the teacher education programme in such a way that teachers should be enabled to face the new demands and improve the efficiency and effectiveness of teaching-learning process. Through professional development teachers acquire life-long learning and good ICT skills incorporated into a new pedagogical approach that helps them in accepting the challenges of this new technological world. Thus, information and communication technology plays important catalytic role in changing the complete scenario of teacher education system.

Keywords: ICT, professional development and teacher education

1. Introduction

Knowledge, education and teaching-learning process are strongly linked with the evolution of society. In last decades, technology has covered all aspect of social and cultural lives and become an important factor in shaping the new global economy and producing rapid changes in society. Within the last decade, ICT have significantly transforms not only the nature of education but also explores and facilitates the role of students and teachers in the teaching-learning process. ICT is considered as a powerful tool for problem solving, conceptual development and critical thinking that helps to make the learning process much easier for the students. Teaching nowadays is not the same job as it was a century ago. Due to tremendous changes, the teachers find it difficult to cope with the new technologies. It is expected that teachers' high-level use of technology are adequate to meet the needs of 21st century. Therefore knowledge of teachers should be updated in order to increase the effectiveness of teaching-learning process.

2. 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 mediums. (<http://techterms.com/definition/ict>).

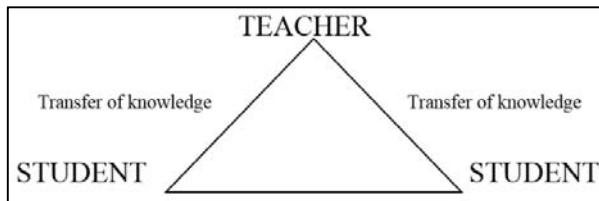
ICT in education means "Teaching and Learning with ICT". (<http://www.elmoglobal.com>). Today's generation is called as 'generation Y' because digital activity is like a mother tongue for them. Nowadays students are very creative, curious and have different new skills and abilities; they even seem technologically more competent than teachers. Thus teachers have to be equally competent so that there will be a parallel and satisfied teaching-learning outcome.

The importance of ICT in education was recognized in 1984-85 when the Computer Literacy and Studies in Schools (CLASS) Project was introduced. The project was subsequently adopted as a centrally-sponsored scheme during the 8th Plan (1993-98). Anderson and Glen (2003)^[2] related ICT to those technologies that are used for accessing, gathering, manipulating and communicating information that includes hardware and software applications, the Internet, video-conferencing etc. Tatnall (2005) have stated that "ICT in learning is a prerequisite for seeing new source of knowledge for the learners to shift them from traditional methods of teaching-learning."

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3. ICT and Teacher Education

Traditionally we were based on hierarchical and pyramidal structure of teaching-learning process where teachers were considered as fact teller, experts and only source of knowledge. The relationship between teacher and student was very restricted and basic knowledge of students was only limited to read, write and count.



In new phase, the basic knowledge of digital natives is not only limited to read and write but to accumulate knowledge as much as possible. It was difficult for the teachers to change their mindset and teaching with the new techniques. Teachers were hesitated in adopting technological innovation in teaching-learning process because of lacking relevant knowledge and constantly changing technological methods. Some of the challenges faced by teachers are following:

1. Most of the teachers are unaware about the developing technologies.
2. It is a challenge for the teachers to identify which technology is appropriate in their teaching process.
3. Due to generation gap teachers feel uneasy to adapt the new technological world.
4. In India, teachers find it difficult to use high-tech technologies in education due to insufficient financial support.
5. They rely more on their conventional teaching method because they are not sure and confident about the advanced technologies.

For the effective teaching-learning process, teachers should have deeply constructed and connected knowledge that can be applied to real situation. Thus, there is an effective teaching-learning process for digital natives that make learning more constructive, learner-centered, blended learning and e-learning. According to U.S.DOE (2003), "technology is now considered by most educators and parents to be an integral part of providing a high-quality education." (The National Centre for Educational Statistics reported in article, Teacher's tool for the 21st century: A Report on Teachers use of Technology, 2003)

4. A Paradigm Shift

Nowadays we are experiencing a paradigm shift in teaching-learning process from traditional methods to technology based methods of teaching. Earlier learning was done through facts, drill, practices, rules and procedures but the methods like projects, inquiry, design, discovery and invention, creativity and diversity, action and reflection become more suitable and common for the present teaching-learning process. Now the main focus of learning is shifted from teacher centered to learner centered. With the advancement in technology the learning become more engaging and interactive for both the teachers and learners. The role of the teacher has changed from knowledge transmitter to that of facilitator, knowledge navigator and sometime as co-learner. ICT has transforms the aims, ways,

methods and nature of teaching-learning process and facilitate the meaningful and enjoyable learning environment for the learners. It provides powerful tools and techniques that shifts the teaching-learning process from teacher centered to learner centered.

5. Models for Integrating ICTs into Teaching

Integration of ICT in teaching is the main focus for improving the knowledge and technical abilities of the teachers. There are many teachers who are unable to use new techniques in teaching process so for them extensive and enduring training is required for the integration of ICT in their administrative activities. Several models and strategies have been identified for the teachers that can help them quickly to develop technology-rich lessons in their respective fields.

Some of the models that can be integrated in ICTs are as follows:

5.1 Web-Based Lessons

A Web-based model is an inquiry-oriented activity in which most of the information is used by learners from the Web. This model is designed to help the learners for developing critical, analytic and evaluative thinking for using the relevant information from the web. It can be effectively applied to all levels of education, from elementary to postgraduate level and also in many different areas. Web-based learning promotes constructivist approach by allowing all round interaction and enhances the knowledge by interaction among the students and teachers. Teachers can take advantages of web power for adopting high-tech techniques in teaching-learning process.

5.2 Multimedia Presentation

Multimedia presentation is different from normal presentation as it contains objects such as text, graphics, video, animation and sound clips. In this method students acquire new knowledge and skills by designing, planning, and producing multimedia products in teaching-learning process. Many teachers find that students show more interest and motivation when they use technology in classroom. Few instances of multimedia presentations may be given in the following manner:

- Creating a web page or site;
- Using a multimedia slide show to make presentation;
- Developing a branching hypermedia stack;
- Selecting and editing video to make learning interesting.

5.3 Tele-computing Project

Tele-computing project is an Internet-enriched learning activity that includes e-mail, audio and video conferencing, web-browsers, group discussions etc. It helps the students from different locations to share their experiences, information, beliefs and problem-solving strategies.

5.4 Online Discussion

One of the common types of Tele-computing activity is online discussion. Communicating online offers participants freedom to send and receive information efficiently across diverse geographic locations. With the growth of technology, students and teachers can connect to experts and peers through a variety of formats, such as chat rooms, electronic bulletin boards, and email.

6. Impact of ICT on Professional Development

The term professional development refers to a variety of specialized training, formal and informal education and advanced professional learning intended to help administrators, teachers, and other educators for improving their professional knowledge, competence, skills and effectiveness. It includes individual development, in-service education, staff development, peer collaboration, study groups, action research, publication of papers and the personal and professional growth of teachers and administrators. Shafika (2006) defines Teacher Professional Development (TPD) as “a systematized, initial and continuous, coherent and modular process of professional development of educators in accordance with professional competency standards and frameworks” (<http://www.gesci.org/old/files/docman/TPD>).

Network technologies cannot solve the problems on its own, it requires teachers who can make the use of technology easy and effective in teaching-learning process. Teachers cannot be replaced by the advanced technologies; they are the key to use technology appropriately and effectively. Teachers need training of technical skills and professional development for improving teaching-learning process. For the successful integration of technology one-time training or workshop is not enough for the teachers in teaching process. Instead the training should be provided periodically for the proper development in their professions. It can be done in at least three dimensions:

- **Pre-service Training:** Here the novice teachers will learn the management and organizational skills, competency in teaching, mastery over the subject matter they will teach; and proficiency in using educational resources with the help of technology.
- **In-service Training:** It includes workshops, seminars, and short courses that create the opportunities for acquisition of new teaching skills and also make them aware about the new technologies that would be helpful for the teachers in their professional development.
- **Ongoing Pedagogical Support:** As the technology increases the teachers face daily challenges and responsibilities in their teaching profession. This approach provides pedagogical contact knowledge and technical support for the pre-service and in-service teachers in order to improve their professional development. While technology increases teachers' training and professional development needs, it also offers part of the solution.

It shows that ICTs can overcome teachers' problems, build-up their confidence and connect them with the global teacher community and technology based society. Technology and teacher professional development can be linked with the educational reform, it shifts teacher-centered, and lecture-based instruction to student-centered, interactive and constructivist learning. Thus, information and communication technology plays important catalytic role in changing the complete scenario of teacher education system.

7. Conclusion

The aim of this paper was to provide an overview of ICT and Professional development of teachers. The rapid changes in technology will provide benefits for both the learner and the teacher. This paper shows that ICTs will change and modify the role, skills and responsibilities of the

teachers. The use of ICT will enhance the learning experiences of the students and help them to think and communicate creatively. In India, teachers should be prepared to face the challenges of 21st century for imparting new education with the integration of ICT in such a way that teachers are enabled to face the new demands in their profession. Efforts must be made by the teachers to adjust themselves in this technology based society this will definitely create a new learning environment and information rich society.

8. Suggestions for Teachers

In order to improve their skills and knowledge of technology some suggestions for teachers are given below:

1. Teachers should recognize the needs and desires of the digital native generation. They have to understand the new characteristics of the ‘generation Y’, so that accordingly they should use appropriate technologies in teaching-learning process.
2. Teachers should be ‘e-teachers’ that means they should not only be able to use tools and resources but also to integrate ICTs as a tool for pedagogical enrichment.
3. Regular workshops, seminars, self-paced training and short-term courses should be organized by the administration to integrate technology effectively into the classrooms.
4. Teachers must work towards the collective intelligence of the pupils. This means that teachers must work collectively, take part in collective missions, experience collective learning and develop collaborative activities. It shows that there is a need of collectively intelligent teachers.
5. Teachers should be ‘LLL-teachers’, means that they have to prepare their pupils for lifelong learning. This implies that teachers themselves have to be lifelong learners.
6. Teachers should be ‘blended teachers’ that means mixing together digital and non-digital activities that deals with time and space and all the possibilities offered by ICT in the management of time and space.

9. References

1. Aggarwal AK. Web-based Education: Learning from experiences, IRM Press, USA. 2003.
2. Anderson J, Glen A. Building capacity of teacher's facilitators in technology pedagogy integration for improved teaching and learning. Retrieved January 2003. from: http://www.unescobic.org/filemin/user-upload/ict/ebooks/ictbuilding_capacity/building_capacity.p.d.f
3. Andrew L. Comparison of teacher educators' instructional methods with the constructive ideal. The Teacher Educator. 2007; 42(3):157-184
4. Ertmer PA. Teacher pedagogical beliefs: The final frontier in our quest for technology integration? Educational Technology Research and Development. 2005; 53(4):25-39.
5. Ertmer PA, Ottenbreit AT. Teacher Technology Change: How knowledge, Confidence, Beliefs and Culture Intersect. Journal of Research and Technology in Education. 2010; 42(3):255-284.
6. Fathima S. Challenges of ICT in Teaching Learning Process, Research Inventory: International Journal of Engineering and science. 2013; 2(12):51-54.

7. Goel A, Gupta M. ICT and Teacher Education, Asian Journal of Multidimensional Research. 2012; 1(3), ISSN 2278-4853.
8. MHRD. National Policy on ICT in school Education, Government of India. 2012.
9. Ni LB. ICT use in Teaching and Learning of history(An Educational Review), International Journal of Computer Networks and wireless communications, ISSN: 2250-3501, 2012; 2(4).
10. Salehi H, Salehi Z. Challenges for using ICT in education: Teachers' Insights, International Journal e-Education, e-business, e-management & e-learning, 2012; 2(1).
11. UNESCO. Information & Communication technologies in Teacher Education. A Planning Guide: UNESCO Publication. 2002.
12. UNESCO. ICT in Teacher Education: Policy, Open Educational Resources and Partnership, UNESCO Institute for Information technologies in Education, Moscow, 117292, Russian. 2010.
13. <http://brijuthankachan.com/2012/12/07/ict-in-indian-education-a-brief-history/>
14. <http://www.leeds.ac.uk/edocol/documents/00002194.htm>
15. <http://www.tarj.in/images/download/ajmr/AJMR%20%20AUGUST%202012%20PAPERS%20%20PDF/AJMR%20AUGUST%202012%20PAPERS%20%20PDF/8.19,%20DR.%20ANUBHA%20GOEL%20&%20MUKTA%20GUPTA.pdf>
16. <http://iite.unesco.org/pics/publications/en/files/3214684.pdf>
17. <http://www.thehindu.com/features/education/ict-a-revolution-in-teachinglearning-process/article2865448.ece>
18. <http://www.ijeeee.org/Papers/078-Z00061F10037.pdf>
19. <http://www.intel.in/content/dam/www/program/education/apac/pk/en/documents/k12/intergration-of-ict-in-teacher-education.pdf>
20. <http://www.unevoc.unesco.org/fileadmin/up/emergingtrendsinictforeducationandtraining.pdf>
21. http://www.teindia.nic.in/e9tm/Files/ICT_Documents/TE_%20IN_%20A_NEW_PARADIGM_%20ICT_%20INTEGRATED_%20CONSTRUCTIVIST_%20LEARNING.pdf
22. Edci-513-final-paper-impact-of-technology-integration_bmcDaniel1.docx-word.