Impediments to the Uptake of Quality ICT in Educational Concern

Pushyamitra Tiwari*

ABSTRACT

The purpose of this paper was to high lighten the fact that integration of ICT into teaching and learning is definitely for improving and updating the education which is treated as easiest approachable mode for younger generations. Government even made considerable investment in acquiring hardware and software for schools, connecting them to the Internet and helping educators by improving their ICT- related knowledge and skills, still lots of obstacles persist on the way. Teachers' educators are the basis producing the future teachers who are the pillars of nations. The literature studied shows that the ICT integration into teachers' classroom practices is not at the desired level. However, it is important to periodically assess the actual situation of ICT in educational practice in order not only to account for the financial investments, but also to inform decisions about the content and directions of future policies. The findings presented in this paper shed light to the complexities of integrating ICT in teaching and learning. These roadblocks needs to rectified from the very root, so that problem may not be there in the long run.

Keywords: *Teacher use of ICT, ICT implementation, Digital generation, Internal and external barrier.WBankis.*

Introduction

Technologies play an important role in development of student skills, motivation and knowledge. E- learning has a large and growing market with the extraordinary potential and vision in education. It's the instructional content or learning experiences delivered or enabled by electronic technologies and it incorporates a wide variety of learning strategies and technologies. ICT in the classroom increases the students' awareness of the world around them, as they have access to a large amount of information. (ICT) has been developing rapidly in recent years and opens new horizons in the field of education. ICT as a teaching aid is more complicated in that it demands more specific skills from the teachers. Attempts to integrate technology in education provoke a variety of responses from teachers that range from enthusiasm and skepticism to fear and uncertainty as well. ICT for education is more critical today than ever before since its growing power and capabilities are triggering a change in the learning environments available for

* Research Scholar (Commerce), University of Allahabad, Email : tiwari.pushya@yahoo.co.in

education. The use of ICT offers powerful learning environments and can transform the learning and teaching process so that students can deal with knowledge in an active, self directed and constructive way. We cannot think of a society without ICT in today's scenario but certain roadblocks which is being discussed in this paper is need to be considered for proper mergence of technology with educational domain. For many daunting task requires the acquisition of new resources, expertise and careful planning. One of the important focus in teacher education system is equipping teachers with a pedagogy that enable them to integrate information and communication technologies with the process of teaching and learning.

Digital Education: The Transnationalization Towards E-learning

J.R. Gesej said that **"** Educational Technology has to be seen as part of a persistent and complex endeavour of bringing students, teachers and technical means together in an effective way **"**. Countries are insisting and planning more to innovate new ways of imparting education through technology. In this mission India's Prime Minister Mr. Narendra Modi and HRD Minister Smt. Smriti Irani have announced their policy for latest educational planning. So meet out the requirements of every student, new means of educations should be used by teachers and for that they must be educated for e-learning. E-learning is also at developmental stage of educational development as digitalized education. E-learning includes all levels of education from pre-school to secondary school, higher education and even beyond.

ICT in Modern Schools and Colleges

At present ICT is considered as an important means to promote new methods of instruction (teaching and learning). It should be used to develop students' skills for cooperation, communication, problem solving and lifelong learning .Why do we need ICT in schools? Was education not happening before computers came into existence? Why is this paradigm shift necessary? The shift is necessary because this is the age of information and technology, an age that requires that teachers facilitate the gathering of this information and not merely teach. Training a teacher in using ICT is more crucial than acquiring a large number of computers. Teachers have to be trained to facilitate the learning process, make the process real, achievable, challenging, yet exciting and not intimidating. Reducing teacher talk and encouraging student discussion is extremely important. Everything need not be written on the blackboard to be considered as taught. Many teachers think the computer is used only to make the content look attractive! They need to know that in 21st century, information is not difficult access, instead organizing, sharing, and collaborating become essential skills. Hence, ICT is not merely to portray information but to interact, share, and thus learn. ICT provides meaningful, absorbing media that makes teaching-learning more productive. Alliance of ICTs enhances the quality of education by helping teachers to do their job and by helping students to learn more effectively.

Unfortunately, in India, ICT is largely associated with the use of computer and Internet. What one uses ICT for and how one uses it, is not addressed sufficiently. Schools and colleges acquire computers, Internet connection, LCD projectors and then send their teachers for crash courses that supposedly teach them to use technology. The trouble is this whole approach is devoid of focus. But, until teachers are made to realize the need of ICT, no amount of computerization can help. Mere use of computer or Internet doesn't improve the learning output.

Barriers to Integration of ICT in Education Domain

Definition of Barrier

The word "barrier" can be defined as "any condition that makes it difficult to make progress or to achieve an objective" (WordNet Website). Seffrin et al (2008) define barrier as **"**… an event or Condition that hinders the adoption decision**"**. This paper aims to identify the conditions that hinder achieving the objective of integrating technology in education or hinder the individuals' adoption of ICT-based education.

However, it has also been firmly established that just the mere introduction of ICT into schools does not, by itself, improve the quality of education. Due to ICT's importance in the future of education, identifying the possible obstacles to the integration of these technologies into schools is an important step in improving the quality of teaching and learning. This article seeks to examine some of the reasons for the lack of a more widespread uptake of ICT on the part of teachers. Since the beginning of current century, education has faced a variety of social, cultural, economical and technical challenges. However, teachers are faced with some barriers that prevent them to employ information and communications technology (ICT) in the classroom or develop supporting materials through ICT. The process of using ICT in everyday education is very complicated. The virtually limitless opportunities of access to information in an educational context can pose a real danger of information overload if the teachers do not have the skills in filtering information for relevance, or are unable to establish a coherent organizing principle. Both students and teachers may lack the necessity skills to access, process and use information. Moreover, teachers are faced with some challenges and barriers that prevent them to employ ICT in the classroom or develop supporting materials through ICT. Insufficient technical supports at schools and little access to Internet and ICT, prevent teachers to use ICT in the classroom. Shortage of class time and time needed to learn using ICT were reported as two other key barriers for teachers to integrate ICT into the curriculum. These barriers were experienced by participants differently depending on their own study program. It is not surprising that these *preservice* teachers identified barriers to ICT integration, both to their own learning and to their future students' learning, as similar barriers to the integration of ICT into student learning are perceived by *inservice* teachers

Major Types of Barriers

Yes, the implementation of educational technology could facilitate and support effective teaching and learning, but there are many challenges involved in implementing technology in developing nation like India. There are two different types of barriers that is stopping us from using ICT in the classrooms daily, they are Extrinsic and Intrinsic barriers. Extrinsic barriers being issues such as time, support and resources. The other, intrinsic barriers being the influences that teachers, administrators and individuals may have on the integration. Categorisation of barriers as external (first order) or internal (second order) where first-order barriers include lack of equipment, unreliability, lack of technical support and other resource-related issues; second-order barriers include both school-level factors such as organisational culture and teacher-level factors such as beliefs about teaching and technology, and openness to change

Further, barriers grouped into two levels also: those relating to the individual (teacher-level barriers) and those relating to the institution (school-level barriers). Although this may be a useful distinction to make in beginning to address the subject, the literature points to a complex interrelationship between school-level and teacher-level barriers, and between the barriers within those levels.

❖ Teacher-level barriers

Teacher-level barriers are divided into four elements. They include factors such as lack of teacher's confidence, lack of teacher competence, resistance to change and negative attitudes towards ICT.

- ***lack of time*** — for both formal training and self-directed exploration and for preparing ICT resources for lessons. Teachers have many classes per day, and they don't have time to prepare for ICT-based classes during the school time. Time is also needed for teachers to become better acquainted with hardware and software.
- ***lack of self-confidence in using ICT*** - Teachers usually receive training on using computer application but they rarely receive training on how to us ICT in teaching.
- ***negative experiences with ICT in the past***
- ***fear of embarrassment*** in front of pupils and colleagues, loss of status and an effective degrading of professional skills .
- ***classroom management difficulties when using ICT***, especially where pupil-to-computer ratios are poor.
- ***lack of the knowledge*** necessary to enable teachers ***to resolve technical problems*** when they occur. If there is a lack of technical support available in a school, then it is less likely that preventative technical maintenance will be carried out regularly, resulting in a higher risk of technical breakdowns. Once the breakdowns do occur, a lack of technical support

may mean that the equipment remains out of use for a longer period of time. This may eventually make teachers disinterested in using the technology.

- ***lack of personal change management skills -*** Teachers complained that seminar or conferences for sharing the best practices were never held.
- ***perception that technology does not enhance learning***
- ***lack of motivation to change*** long-standing pedagogical practices, there can be some teachers who do not see the benefits ICT can offer. It is therefore important to show the teachers how new technologies will benefit their teaching and student learning. Some teachers may also feel that there are more than enough ICTs readily available and thus feel there is no point in having more initiatives. Subsequently more efficient ways of teaching may not come into effect in their classrooms. Alternatively, teachers may not feel supported, guided or rewarded in the integration of technology into their learning.
- ***perception of computers as complicated and difficult to use***
- ***Lack of effective training*** - Before teachers need to know how to use computer technology, they need to ask "why" they need to know, and "what" they need to know. Equipping teachers with IT skills, will not necessarily influence the likelihood that they will use computers to extend or improve their teaching. Providing both pedagogical training, and training in using ICT therefore seems very important.

❖ **School-level barriers**

They are broken into three elements, they categorised as lack of time, lack of effective training and a lack of accessibility.

- ***lack of ICT equipment***, and the cost of acquiring, using and maintaining ICT resources
- ***lack of access to ICT equipment*** due to organisational factors such as the deployment of computers in ICT suites rather than classrooms
- ***Obsolescence of software and hardware***
- ***unreliability of equipment***
- ***lack of technical support & administrative support***
- ***lack of institutional support*** through leadership, planning and the involvement of teachers as well as managers in implementing change
- ***lack of training*** differentiated according to teachers' existing ICT skill levels
- ***lack of training focusing on integrating technology*** in the classroom rather than simply teaching basic skills

Conclusion

In general, attitude towards information technology influenced teaching effectiveness of teacher educators. Teachers with a more positive attitude towards IT exhibited higher levels of teaching effectiveness in comparison to those having average or negative attitude towards IT. More rapid uptake and success are unlikely to occur unless five items are addressed – power, Internet connectivity and bandwidth, quality teacher training, respect and better pay for teachers, and the sustainability of implementations. What is stopping the community and us as teachers from embedding ICT into every classroom effectively ? In the context of this study, it is clear that there are five interrelated barriers against the integration of ICT into teachers' practices. First of all, the presence of adequate ICT equipment in the classroom environment is a determining factor in teachers' practices. Teachers rarely use ICT equipment when they in some other room at school, rather than the classroom.

Apart from the lack of ICT equipment, frequent breakdowns of the equipment and lack of internet connection in the classroom are other important physical factors affecting teachers' practices. The outcome of thorough review of literature and findings of study suggests that teachers have a strong desire for the integration of ICT into education but that they encountered many barriers to it. The major barriers consists of lack of confidence, lack of competence and lack of access to resources. ICT resources including software and hardware, effective professional development, sufficient time and technical support need to be provided for teachers. No one component in itself is sufficient to produce good teaching. However, the presence of all components increases the likelihood of excellent integration of ICT in learning and teaching opportunities.

References

1. http://edutechdebate.org/2014-ict4edu-trends/5-key-barriers-to-educational-technology-adoption-in-the-developing-world/
2. http://www.teachersofindia.org/en/article/ict-education
3. https://molly3041938.wordpress.com/a-teachers-role-in-an-it-supported-world/
4. Educational Technology in Teaching and Learning: Prospects and Challenges edited by Doris D'Souza, Upasana Singh, Durga Sharma, Prabhas Ranjan (2013).
5. Preparing for Life in a Digital Age By Julian Fraillon, John Ainley, Wolfram Schulz, Tim Friedman, Eveline Gebhardt (2013).
6. The Indian Express, Written by Shubhlakshmi Shukla | Vadodara | May 2, 2009 .
7. Cuban, L. (2001). Oversold and underused: Computers in the classroom. Cambridge, MA: Harvard University Press.
8. WHETSTONE, L.& CARR-CHELLMAN, A. (2001), 'Preparing preservice teachers to use technology: survey results', *TechTrends,* 45 (4), pp. 11–17.
9. Goktas, Y., Yildirim, S., & Yildirim, Z. (2009). Main Barriers and Possible Enablers of ICTs Integration into Pre-service Teacher Education Programs. Educational Technology & Society, 12 (1), 193–204.

10. Melor Md Yunus, Lubis, M and Lin, C. (2009). Language Learning via ICT: Uses, Challenges and Issues. *WSEAS, Transactions on Information Science and Applications.* 6(9):1453-1467.

11. Gulbahar, Y. (2007). Technology planning: A roadmap to successful technology integration in schools. *Computers & Education* 49(4): 943-956.

12. Cavanaugh, T. (2002). The need for assistive technology in educational technology. *Educational Technology Review*, 10(1)

13. Mumtaz, S. (2006) Factors Affecting Teachers' Use of Information and Communication Technology: A Review of the Literature, Journal of Information Technology for Teacher Education, 9:3, pp. 319-342.