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### Usage of Information and Communication Technology in Teaching and Learning and its Barriers

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#### Abstract

Information and communication technologies (ICT) have become common place entities in all aspects of life. Education has been an important instrument for social and economic transformation. It is a very socially oriented activity and quality education has traditionally been associated with strong teacher's having high degree of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in 21<sup>st</sup> century. Early studies depicted that teacher's enacted beliefs in terms of classroom technology. The past studies indicated that there was variety of external and internal barriers that prevented teachers from using technology. Teachers own beliefs and attitudes about the relevance of technology to student's learning were perceived as having the biggest impact on their success. This paper attempts to provide information about the barriers that were responsible for the integrations of new technologies into teaching and learning.

**Keywords:** ICT, Barriers, teaching, learning

#### Introduction

The concept of moving the traditional classroom method of desks, notebooks, pencils, and blackboard to an online forum of computers, software's, and the Internet threatens many teachers who are, familiar to the face-to-face interaction of the traditional classroom. In the past 10 years, online instruction has become extremely popular as is evident in the rise of online universities, Computer-based systems have great potential for delivering teaching and learning material. The rapid development of Information and Communication Technology (ICT), particularly the Internet, is one of the most fascinating phenomena characterizing the Information Age. ICT consist of hardware, software, network and media for collection, storage, processing, transmission and processing of information. ICT powers our access to information, enables new forms of communication, and serves many on-line services in the spheres of commerce, culture, entertainment and education. ICT have great potential for knowledge dissemination and effective learning. Adaptation of ICT in education has been a powerful way to contribute to educational change.

#### Some Barriers to Integrate ICT into Education

The integration of ICT into education is a complex process and one may encounters number of difficulties. These difficulties are known as barriers <sup>[2]</sup>. A barrier is defined as "any condition that makes it difficult to make progress or to achieve objectives. In 1999, Ertmer found two types of barriers that impacted teacher's uses of technology in the classrooms. First order barriers were external to the teacher and included resources such as software, hardware, training, time and support. Second order barriers are internal to the teacher that included the teacher's confidence, negative attitude of teacher, practices and competence.

In 21<sup>st</sup> century the use or technology is increased and it eliminating first order barrier of the teacher. Given this, the researchers and educators began to turn their attention to the relationship between teacher's pedagogical beliefs and meaningful technology use.

Many researchers assert that the use of computers can help students to become knowledgeable, and gives teachers an opportunity to motivate the needful students. But there are several barriers that confront teacher when integrating ICT into education.

The new ICT have other potential benefits as tools for enhancing teaching and learning in schools and colleges. These tools include data capture, multimedia software for simulation, publishing and presentation tools, digital recording equipment's, and computer projection technology. But teacher faces different types of barriers when using ICT in teaching and learning.

### **Lack of Technical Support**

Without good technical support in the classrooms, teachers cannot expect to overcome barriers preventing them from using ICT. Technical problems were found to be a major barrier for teachers. These barriers included waiting for websites to open, failing to connect to the Internet, printer not printing, malfunctioning computers, old computer systems. Regular maintenance of hardware will improve the teacher's confidence. Lack of technical support can prevent teacher from successfully integrating ICT into education [7]. Any hardware problem cause delay for teaching. We have only 45 to 50 minutes for teaching. Moreover students usually come in late and teaching start five minutes later. Therefore, to plan for ICT teaching, teachers need technical support, administrative support, or pedagogical support from schools or colleges. Technical support comes from different types of sources such as actual resources, internet access etc. Administrative support is required for maintaining hardware and software. Another barrier of teacher for ICT integration is his or her professional development. Professional development of employ overcomes the barriers to ICT integration. Teacher needs sufficient time for both professional and curriculum development activities such as reviewing software's, exploring available resources, searching information on internet. This may position a barrier to effective ICT integration for teachers

### **Lack of Training**

There are not effective training opportunities for teachers for the use of ICT in the classrooms. There are several components of training, pedagogical training, skill training, ICT use training, digital literacy training etc. Teacher should attend professional development courses regularly. Train teachers for specific ICT skills. When there are new tools and opportunities for teaching, teacher training is essential if they are integrating these skills into their teaching. The study asserts that teachers need training in technology education. The teacher's not only computer literate but also he should develop skills in integrating computer use into their teaching practices. Lack of use of ICT in teaching practice is also a barrier of teacher. Therefore, if training is effective teacher also able to access ICT resources.

### **Lack of Teacher Confidence**

Having confidence will only improve a teacher's values. It is a key component of being successful [10]. Several researchers indicate that lack of confidence prevents teacher from using ICT in their teaching. Teacher confidence is directly affected by levels of personal access to ICT. Teachers "fear of failure" caused a lack of confidence [11]. Limited ICT knowledge of teacher makes them feel anxious about using ICT in the classroom and not confident to use it in the classroom. It was argued that lack of confidence and experience with technology influences teacher's motivation to use ICT in the classroom. The teacher who have confidence in using ICT identify that technologies are helpful in their teaching and personal work.

### **Lack of Teacher Competence**

Another important factor of teacher barrier is his competence an integrating ICT into pedagogical practice. The study shows that many teachers lacked the knowledge and skills to use computers in their teaching practices. The teacher who do not use computers in classrooms claims that "lack of skills" and are constraining factor preventing teachers from using ICT for teaching. Teacher using chalk and talk method provide little trouble for teacher. However, when uses ICT practices for teaching and learning faces difficulties for teacher to finish topic within time.

### **Negative Attitude of Teacher**

One key factor for using ICT in teaching is an attitude of teacher to use of technologies. Integrating new technologies into educational settings requires change and different teachers handles this change differently. Teacher felt that while using new technologies into their teaching they were not supported or rewarded. The teacher who resists change is not rejecting change but lack of education in adopting changes in new teaching methods. The Empirica (2006) Teachers who are not using a new technology such as computers, projectors in the classroom are says that the use of ICT has no benefits to him and students also. Cox *et al.* found that teachers are not like to use new technologies in their teaching and teacher does not change their professional practices.

### **Conclusion**

ICT provides great opportunity for schools, colleges and universities in developing country. The finding indicates that teacher had a strong desire for to integrate ICT in education, but they faced many barriers. The purpose of this paper was to determine barrier that are faced by teacher while integrating ICT in their teaching. The major barriers were lack of technical support, teachers training, lack of teacher confidence, lack of competence, accessibility of resources, and sufficient time. Not a single component is providing good teaching. However, presence of all components increases the possibility of excellent integration of ICT in teaching and learning opportunities.

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