

ICT Integrated Teaching & Learning: A Critical Review of Literature

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Abstract: Information and Communication Technologies (ICT) integrated teaching and learning determines informational, communicational and technological teaching and learning which is flexible than traditional method. ICT act as stimulus to develop every aspect of teaching and learning in the postmodern era. Reviewing ICT oriented materials show that remarkable successes have been brought with the successful usage of technological equipments. Digitalized studying environments have been practicing with the help of ICT oriented. ICT based education is a blessing for the teachers and learners. ICT develops the real-life teaching and learning. This study aims to bring together fruitful findings from reviewed literature related to the effective impact of ICT in easy teaching and learning. Reciprocated teaching-learning is conducted with ICT to develop education smoothly. Critical review of literature offers clear scenario of ICT integrated teaching and learning in this study. This study shows teaching, learning, quality of education, motivation of teachers and learners, learning settings, performances, manners of leaching and learning, styles, and weakness of ICT very clearly. It also determines how ICT can bring unique pedagogies for the betterment of the human beings.

Key Words: ICT, teaching and learning, academic performance.

Introduction

Information and Communication Technologies is the integral part of modern societies and the features of ICTs dominate the world in every aspect. ICTs create dimensions in teaching and learning. On the basis of educational requirements, teaching and learning curriculum, plans, policies, styles, manners, it can be mentioned that the usage of ICT is highly appreciated. Touch of ICTs makes education methods advanced in undeveloped, developing and developed countries. Various ICT oriented significant products like teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audiocassettes and CD ROMs etc are used properly to fulfill educational purpose (Sharma, 2003; Sanyal, 2001; Bhattacharya & Sharma, 2007). According to Yusuf (2005), ICTs affect the field of education and it unquestionably affected teaching, learning and research. This research clarifies how ICT helps to educate and study in the recent world. This study evaluates various ICTs oriented education. Modern ICTs offer enormous opportunities for learning with a lot of supports (Berge, 1998; Barron, 1998). It is clear that the post modern educational activities have been subjugated by ICTs easily. Teachers and students are highly connected to the use of ICTs in order to teach and learn. According to Zhao and Crik (2001),

teachers believe that they have control over ICTs. Teachers have immense belief in ICTs that they can teach highly with ICTs in the classrooms. According to Collins (1996), ICTs is a bona fide resource of learning in this period. Actually, ICTs is accurate source to amass teaching and learning materials which will be helpful teaching and learning. Use of ICTs can forward mutual learning and reflection about content (Susman, 1998). A mutual learning can be ahead with the help of ICTs because of its potentialities. Its efficiency can be helpful to generate a creative teaching and learning setting for the teachers and the students in the ICTs oriented world. Teachers and learners choose the ICT based education to procedure education smoothly and in interesting ways.

Concept of ICT

According to Abimbade (1996), ICT is a method, concept, and function, plan of collecting, analyzing and sharing information by using electronic equipment. It is a matter of sending, processing, storing, transforming ideas, information or perception through computer and telecommunication facilities (Ezekoka, 2007).

Objectives of the Critical Review of Literature

Objectives of this study is to explore, evaluate and justify the important journals, books, articles of ICTs based education. This paper makes a scenario of ICTs integrated teaching and learning by studying education policy makers, education developers, researchers, planners and teachers' ICTs oriented rationalizations. This study aims at disclosing the blessings and impacts of ICTs in teaching and learning. It is ICTs which have provided a lot to make education organized, informative and qualitative for all. How 21th century is being developed on the basis of ICTs based education is discussing in this paper. One of the important objectives is how ICTs lead teaching and learning. This paper describes the exploitation and integration of ICTs for educating smoothly whatever the teacher and the learners actually want. It also discusses the various effectual uses of information and communication technologies. Another one is to offer research based guide to solve problems that are faced by teachers and students in using information and communication technology.

Teachers' Competences and Attitudes toward ICT

In the world of information and communication technology, teachers are highly motivated teaching with ICT where learners are responded reciprocally. Teachers enjoy teaching with ICT among their students. In performance with geographical flexibility, technology-facilitated learning programs also eliminate numerous of the temporal restrictions that face learners with exceptional needs (Moore & Kearsley, 1996). The learners are sincerely concerned to learn in ICT classrooms (Lu, Hou & Huang, 2010). Therefore, the teachers are intensively related to teach learners in the classrooms. According to Watson (2001), personal and professional functions have been influenced with ICT which changes education settings. ICT impacts pedagogical methods in the classrooms and teaching practices, innovation in education and community services are dominated with the use of ICT (Mikre, 2011). Pedagogical systems can be developed with ICT as it is very easy for the teachers and the learners. By using ICT, students

can be kept in touch with teachers time to time and meaningful learning can be taught with ICT based teaching. According to Fu (2013), ICT is the great embodiment of educational possibilities and supporting for both teachers and learners. Actually, ICT can be acted as very much supporting factors for students and the teachers. Brush, Glazewski and Hew (2008) have conducted study that learning topics, problem solving issues for processing learning can be discovered with ICT and ICT can acquire knowledge, concepts and understanding learning areas. Lot of problems can be solved with the help of ICT. Modern ICT based tools are able to create strong and outstanding support for competence and performance based programs (Oliver, 2000). Quality of education can be increased with the potentiality of ICT. Learners are developed with ICT based education and information sources and cognitive tools are used as computers (Jonassen and Reeves, 1996). Updated and quality teaching and learning can be increased with ICT. Immersion into content knowledge, constructing knowledge and development of complex thinking skills have been increased with the effectiveness of ICT (Kozma, 2005; Kulik, 2003; Webb & Cox, 2004). According to Harris (2002), the benefits of using ICT will be increased and innovative for teaching and learning. ICT can spread education rapidly in every corner of the world.

ICT advances the Quality of Education

It is ICT which can advance quality of education properly and easily. According to Long (2001), ICT has ability to motivate learners to study. ICT has power and strength to motivate learners and the learners can be taught in flexible ways. According to Chai, Koh, and Tsai (2010), new understanding can be created with ICT for students in their areas of learning. Innovative understanding between teachers and learners can be developed with the help of ICT. Choy, Wong, and Gao (2009) found in their study that teacher education programs need to amplify awareness of the benefits of integrating technology into student-centered learning methods and offer pedagogical knowledge associated to student-centered learning as well as technology incorporation strategies. Teaching and learning is being amplified rapidly as ICT is available in every aspect of life. Students can communicate, solve problem and share knowledge everywhere collaboratively whatever they desire for by using ICT (Koc, 2005). ICT can make all learning issues uncomplicated and comfortable. The critical literature shows that the era of ICT brings significant alteration in teaching and learning in tertiary level education across the world (Barrett, Higa, & Ellis, 2012; Garrison, 2011; Hu & McGrath, 2011). In fact, ICT is very important and most of the universities are being developed with the help of ICT. According to Mullamaa (2010), a well-balanced ICT environment will enable students to feel skilled and stay motivated throughout the learning processes. Actually, ICT has potentiality to make balance between students and the teachers regarding teaching and learning. ICT may act as astonishing techniques, tools and stimulus for education curriculum, offering opportunities, adapting the learning contents and tasks to the needs and capabilities of each student and by providing modified feedback (Mooij, 1999, Smeets & Mooij, 2001).

Differences between ICT Basted and Traditional Teaching and Learning Methods

In traditional method, teaching and learning is intensively related on theoretical method rather than practical systems where ICT oriented teaching-learning systems can offer life-like

education. In classrooms, learners cannot get sufficient interaction facilities on the basis of traditional teaching and learning aspects where educational materials are not adequate. In this perspective, lot of researchers think that ICT oriented pedagogy can enable easy and flexible teaching and learning settings in the world. ICT can help the learners to complete their tasks easily and in informative ways whatever they want. The impact of ICT can change educational thinking and environment globally to shape suitable teaching-learning practices. The roles of teachers have been changed now as the innovative impacts of ICT. Regarding the facilities of ICT, teachers are treated as managers, administrators and advisors in teaching observation. The relationship between teachers and students can be developed with ICT basted environments. ICT integrates modern supports, active teaching and learning accessible. Therefore, ICT based teaching and learning is really better than traditional teaching and learning methods in the world.

Teachers' self-assurance in Using ICT for Teaching and Learning

Teachers have enough confidence dealing ICT for teaching learners. Teaching and technology based training consistent factors in classroom (Vannatta & Fordham, 2004). Research shows that technology based teaching is reliable for teaching. According to Reid (2002), ICT not only helps to change traditional ways of teaching but also helps to make teachers creative to use teaching materials and strategies. ICT has ability to create innovative and mind-blowing factors for learner and it can change the educational setting very easily. Teachers' computer self-efficacy influences use of ICT in teaching and learning (Liaw, Huang and Chen, 2007). Palak and Walls (2009) conducted a mixed study to look into whether teachers who normally integrate technology and work at technology-rich schools shift their beliefs and practices toward a student-centered model. Ward and Parr (2010) stated that students can be facilitated if the teachers feel confident to use technology in the classrooms. Peralta and Costa (2007) carried out a study on 20 teachers' competences and self-reliance regarding the exercise of ICT in classrooms. Staples, Pugach, and Himes (2005) stated that technology integration can be helpful for program of study. According to Lim (2007), ICT integration is needed in the schools with a view to offering effective solutions. According to Pedro (2005), ICT has the competence to advance traditional teaching methods, enrich learners' learning understanding and enlarge the potential impact of learning on performances.

ICT develops Critical thinking and skillfulness

According McMahon (2009), critical thinking skills and acquisition ability are accomplished in satisfaction ways with the studying of ICT. ICT can help learners and teachers with the usage of ICT to explore their critical thinking power. Levin and Wadmany (2006) conducted a study and shown that higher level concepts of students can be focused with the help of ICT.

ICT Enhancing Teaching and Learning Motivation

According Noor-Ul-Amin (2013), ICT is very helpful and motivational tool to enhance the quality education. It is ICT which inspires and engages learners for learning (Long, 2001). It has vast impact to motivate and encourage the teachers and learners for teaching and learning. ICT

changes the characteristics of online teaching-learning problem. It is student-directed and diagnostic processes that are done with the use of ICT integrated learning system.

Characteristics of ICT Integrated Teaching & Learning

Schools need to provide suitable access to technology (Yildirim, 2007). ICT can provide schools for teaching and learning frequently. Supon and Ruffini (2009) conducted a study that ICT skills have to be applied in the classroom in to put together successful technology plans. McMahon (2009) conducted a research which showed an adequate correlation between studying ICT and the acquirement of significant thinking skills. Therefore, ICT can show correlation between teaching and technology. Plomp, Pelgrum & Law (2007) conducted a study that public must have right of entry achieving knowledge through ICT. Teachers can be integrated with technology for new teaching exercise in which students can be able for performing (Lawless & Pellegrino, 2007). Wheeler (2001) identified that ICT extent learning settings that will be prepared for next generation. Becker (2000) found the result of ICT develops learners' engagement where learners spend much time outside classrooms. ICT can help to connect together to become a whole (Earle, 2002). Teaching and learning can be assisted using ICT tool ((Internet, e-learning technologies, CD ROMs, etc) (Williams, 2003). According to Huang & Liaw (2005) that motivation of teachers toward technology influence technology oriented teaching. The more experience of using computers, the more positive attitudes towards computers will be increased (Rozell & Gardner, 1999). Teachers' competency with computer is a key issue of successful use of ICT in teaching (Knezek and Christensen, 2002). According to Gorder (2008), teacher experience and use of technology are significantly correlated. The way of integrating ICT to facilitate students' learning can be guided by expertly use of technology (Plair, 2008). Teachers' integration with ICT determines innovation (Groff & Mouza, 2008). Chapelle (2003) has suggested that the teachers, who teach English to speakers of other language, need to be significantly and specifically conscious about the acquaintances of technology to amplify language learning and research. This proposed study will not only remain confined to conscious use of technology but also discover the accurate paves for mind-blowing teaching techniques, innovative communication and contextual information for learners.

Weaknesses of ICT Integrated Teaching & Learning

- ❖ According to Ertmer and Otternbreit-Leftwich (2010), lack of educational support, experience and collaboration is a weakness for ICT integrated teaching and learning.
- ❖ Mastering inadequate time on ICT integrated classroom (Almekhlafi and Almeqdadi 2010).
- ❖ Frederick, Schweizer and Lowe (2006) showed in their study that unsatisfactory experienced to manage ICT integrated materials in the classroom.
- ❖ According to Honan (2008), teachers' insufficient knowledge and skill in ICT can make barrier to teach properly.
- ❖ Focusing on excessive operational skills rather than classes content (Lim 2007).

- ❖ Be short of back-up and appreciation of appropriate and successful use of ICT students and teachers (Tezci 2011a)
- ❖ According to Yildirim (2007), users of ICT is not tainted and the technical problems in the classrooms.
- ❖ Liu and Szabo (2009) conducted a study and showed that lack of technical, financial and motivation can make barrier for ICT integrated education.
- ❖ Inappropriate administrative supports to ICT integrated education (Lim 2007).
- ❖ According to (Yildirim 2007), inadequate materials, software and hardware determine weakness of ICT integrated education systems.

Methodology

The nature of this study is qualitative. Qualitative data were collected through reviewing other contextual literatures.

Conclusion

This critical review has highlighted the importance and influence of ICT integrated teaching and learning. The facts are that modern education is intensively related to ICTs tools, systems and methods. It reveals teachers and learners' feelings, knowledge, applications and attitudes towards ICT. Study has shown that ICT has capability to influence uncomplicated teaching and learning. Teachers and learners have positive outlook towards ICT to extend education in every corner of the world. ICT is very much supporting and influential which are discovered by this research. Successful integration between ICT and education determines successful educational environments which is more effective than traditional educational methods in the world. This research reviews the easiness, flexibility and perfection of ICT based teaching and learning. ICT based teaching and learning settings determines confidential teaching and learning. Even, teachers feel comfort and learners perform well with ICT. In point of fact, ICT affects interesting and bendable education for the modern world.

Suggestions and Recommendations

Researchers show paths or recommend various important strategies to deal weaknesses of ICT:

- ❖ Professional activities of teachers related to ICT should be developed with a view to increasing skills, knowledge, experience and potentiality in ICT (Al-bataineh, Anderson, Toledo and Wellinski, 2008).
- ❖ According to Liu and Szabo (2009), ICT integrated teaching and learning can be flexible with adequate technical support.
- ❖ Weakness in ICT can be demolished with providing sufficient freedom for instructors in selecting and covering curriculum materials (Honan, 2008)
- ❖ It is possible to overcome weakness in teachers and students about ICT with proper training (Hutchison and Reinking 2011).

- ❖ Positive attitudes toward ICT integrated teaching can help the teachers to be encouraged (Lim,2007).

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