

# Developing an effective teaching-learning portfolio through ICTs in Technical and Vocational Education in Bangladesh

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**Abstract** - Information and communication technologies (ICTs) have become usual entities in all aspects of life. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having personal contact with learners. ICT can be used as a core or a corresponding means to the teaching-learning process. The use of ICT in education lends itself to more student-centre 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. The main purpose of this study is to develop an efficient and valuable teaching learning portfolio through the using of ICTs which can play a vital role for the development of technical and vocational education of Bangladesh. We have proper facilities and also have opportunities for implication of ICTs in the process of teaching and learning. As ICTs malfunction in many sectors of developing countries because of a lot of inherent problems like economy, proper guidance, proper motivation, availabilities of IT, electricity and so on. To use ICTs in a proper way and to get its actual benefits is a real challenge for Bangladesh. This paper will focus on the effective use of ICT in Technical and Vocational Education, along with ICT use in the teaching learning process; improve the quality of education; learning motivation, enhance learning environment. ICTs refer to forms of technology that are used to transmit, store, create, share or exchange information in classrooms.

**Index Term** - Information and Communication Technology (ICT), Student-Centre Learning (SCL), Teaching-Learning (T-L), Technical and Vocational Education (TVE).

## Introduction:

The development of a country depends on the expansion of technology. Depending on the needs of the society technology is changing rapidly. To cope up with the technology the modern society can't think without use of ICTs. The term, information technology (IT) has been substituted by information and communication technology (ICT) which grips collection & storage of data, processing and distribution of information. Computers, internet and electronic communication are integral parts of ICT. While the huge march of the ICT revolution is going ahead in many countries of the World, Bangladesh also tries heart and soul to be a part of that revolution and increase their livelihood like developed countries.

To acquire the benefits of ICT in the society we have to take it to the doorsteps of general people throughout the country. It is important to introduce a huge number of cyber centers in the small towns and villages in the country. The cyber centers can be a position where people will get

opportunities to send and receive e-mail and can have

telephonic talk over the internet. These are the places where people will have opportunities to access internet for information on agriculture, business, and health service and can have education, entertainment and so on.

## Background:

According to Daniels (2002) ICTs have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education.

According to UNESCO (2002) information and communication technology (ICT) may be regarded as the combination of 'Informatics technology' with other related technology, specifically communication technology. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audiocassettes and CD ROMs etc have been used in education for different purposes (Sharma, 2003; Sanyal, 2001; Bhattacharya and Sharma, 2007).

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research (Yusuf, 2005). A great deal of research has proven the benefits to the quality of education (Al-Ansari, 2006). ICTs have the potential to innovate, accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005).

However, the use of information and communication technologies in the educative process has been divided into two broad categories: ICTs for Education and ICTs in Education. ICTs for education refer to the development of information and communications technology specifically for teaching and learning purposes, while the ICTs in education involve the adoption of general components of information and communication technologies in the teaching-learning process.

### **ICT boosting teaching and learning process:**

World is changing rapidly for that reason, basic education is essential for an individual be able to access and apply information technology in their day to day activities. Contemporary ICTs are able to provide strong support for all these requirements and there are now many outstanding examples of world class settings for competency and performance-based curricula that make sound use of the affordances of these technologies (Oliver, 2000). The integration of information and communication technologies can help to improve and develop the quality of education by providing curricular support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaborative projects and development of intervention change strategies, which would include teaching partnerships with ICT as a tool. According to Zhao and Cziko (2001) three conditions are necessary for teachers to introduce ICT into their classrooms: teachers should believe in the effectiveness of technology, teachers should believe that the use of technology will not cause any disturbances, and finally teachers should believe that they have control over technology. However, research studies show that most teachers do not make use of the potential of ICT to contribute to improve the quality of learning environments, although they value this potential quite significantly

(Smeets, 2005). As a consequence, the use of ICT will not only enhance learning environments but also prepare next generation for future lives and careers (Wheeler, 2001). Different teachers use different tools to improve their teaching skills. Accordingly, teachers from all disciplines have widely integrated Information and Communication Technology (ICT) to improve their teaching styles (Liu 2011; Liu & Velasquezbryant 2003; Hew & Brush 2007; Donnelly, McGarr & O'Reilly 2011). Therefore, the effective use of ICT significant contributes to emergence of reforms in teaching and learning processes in all sectors of education (Pulkkinen 2007; Wood 1995).

The integration of ICT into teaching and learning processes contributes to increase the interaction and reception of information. Such possibilities suggest changes in the communication models and the teaching and learning methods used by teachers, giving way to new scenarios which favor both individual and collaborative learning. The use of ICT in educational settings, by itself acts as a catalyst for change in this domain. ICTs by their very nature are tools that encourage and support independent learning. Students using ICTs for their learning purposes and as more and more students use computers as information sources and cognitive tools that influence of the technology on supporting how students learn will continue to increase.

### **ICT enhancing the value and user-friendliness of education:**

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 1996). Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace.

Innovative use of Information and Communication Technology can potentially solve this problem. Internet usage in home and work place has grown exponentially (McGorry, 2002). ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and

poor quality of education as well as to overcome time and distance barriers (McGorry, 2002).

Thus, ICT can be used to prepare the workforce for the information society and the new global economy (Kozma, 2005). Plomp et al (2007) state that the experience of many teachers, who are early innovators, is that the use of ICT is motivating for the students as well as for the teachers themselves. Bottino (2003) and Sharma (2003) mention that the use of ICT can improve performance, teaching, administration, and develop relevant skills in the disadvantaged communities. It also improves the quality of education by facilitating learning by doing, real time conversation, delayed time conversation, directed instruction, self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and learn (Yuen et al, 2003). A great deal of research has proven the benefits to the quality of education (Al-Ansari 2006).

### **ICT enhancing learning Environment:**

ICT presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2007). ICT is changing processes of teaching and learning by adding elements of vitality to learning environments including virtual environments for the purpose. ICT is a potentially powerful tool for offering educational opportunities. It is difficult and may be even impossible to imagine future learning environments that are not supported, in one way or another, by Information and Communication Technologies (ICTs).

ICT provides opportunities to access an abundance of information using multiple information resources and viewing information from multiple perspectives, thus fostering the authenticity of learning environments. ICT may also make complex processes easier to understand through simulations that, again, contribute to authentic learning environments. Thus, ICT may function as a facilitator of active learning and higher-order thinking (Alexander, 1999; Jonassen, 1999). The use of ICT may foster co-operative learning and reflection about the content (Susman, 1998).

In spite of the importance of using ICT in education, most of the teachers in Bangladesh who have basic computer

skills, basically use of ICT for performing their organizational tasks. They frequently use ICT for their daily activities, such as: preparing notes, upgrading knowledge, keeping administrative records, and searching information for basic purposes (Khan, 2014). This underlying argument is supported by Mahmud and Gope (2009), where they stated that very few teachers are using technology as delivery tools, such as in preparing effective presentation materials, and to engage students in active learning.

ICT environment improves the experience of the students and teachers and to use intensively the learning time for better results. The ICT environment has been developed by using different software and also the extended experience in developing web based and multimedia materials. ICTs have an important role to play in changing and modernizing educational systems and ways of learning.

### **ICT attract on learning motivation:**

To expand the quality of education, ICTs can attract in several ways, by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. ICT has an impact not only on what students should learn, but it also plays a major role on how the students should learn. Along with a shift of curricula from "content-centered" to "competence-based", the mode of curricula delivery has now shifted from "teacher centered" forms of delivery to "student-centered" forms of delivery. ICT changes the characteristics of problems and learning tasks, and hence play an important task as mediator of cognitive development, enhancing the acquisition of generic cognitive competencies as essential for life in our knowledge society. The influence of the technology on supporting how students learn will continue to increase. Learning approaches using contemporary ICTs provide many opportunities for constructivist learning through their provision and support for resource-based, student centered settings and by enabling learning to be related to context and to practice (Berge, 1998; Barron, 1998). The teachers could make their lecture more attractive and lively by using multi-media and on the other hand the students were able to capture the lessons taught to them easily. As

they found the class very interesting, the teaching also retained in their mind for a longer span which supported them during the time of examination. More so than any other type of ICT, networked computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events.

Besides, they believe that introducing and using ICT into their teaching is time consuming. Very few teachers, in big cities of Bangladesh, are keen to use ICT supported delivery tools in their teaching while a significant number of them are still worried about using ICT in their teaching. These contentions were also found in the recent study conducted by Banu (2012) where she stated that teachers are facing many challenges in introducing ICT into classroom teaching due to lack of relevant knowledge and skills. Therefore, to improve this situation, emphasis should be given in enhancing teachers' ICT skills that largely depend on teacher's professional development programs. Previous research has also shown that a developing country like Bangladesh, needs to concentrate on school-based technology and to improve the training of teachers for the overall improvement of the country's quality of education (Shohel & Banks 2010).

ICT-enhanced learning is student-directed and diagnostic. Unlike static, text- or print-based educational technologies, ICT-enhanced learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICTs allow learners to explore and discover rather than merely listen and remember. The World Wide Web (WWW) also provides a virtual international gallery for students' work (Loveless, 2003). ICT can engage and inspire students, and this has been cited as a factor influencing ready adaptors of ICT (Long, 2001).

## Conclusion:

Effective implementation of ICT in Technical and Vocational educational institutions of Bangladesh largely depends on teachers and principals, teachers who require in-depth professional development, due to lack of knowledge and skills, vigilant attention needs to be given to in-service teacher training for both teachers and principals and pre-service training for newly appointed

teachers before joining the regular classes to acquaint them with the important role of technology in schools settings and to train them on how to prepare and use ICT competently. Professional development is necessary for teachers to enable them to effectively use technology to improve students' learning.

In particular ICTs have impacted on educational practice in education to date in quite small ways but that the impact will grow considerably in years to come and that ICT will become a strong agent for change among many educational practices. Extrapolating current activities and practices, the continued use and development of ICTs within education will have a strong impact on: ICT and teaching learning process; improve the quality of education; learning motivation, learning environment and ICT practice for academic performance. Some other factors that stimulate to introduce ICT in teaching learning activities in the class room situation that are economical, time saving, easy to prepare, attractive, easy to motivate students, easy to administer, communication is easier & easy to integrate depending on the available of ICT tools. The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students.

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