



# Information and communication technology use in education.

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## **Abstract**

The use of ICT in education provides itself to more students-centred learning settings and frequently this creates some pressures for teachers and students, but with the world moving rapidly into digital media and information. The responsibility of ICT in education is becoming more and more significant and consequence will continue to grow and extend into 21st century. As technology has created revolutionize in all aspects of the world, it is also changing our prospects of what students must learn in order to functions in the new world economy.

Students will have to learn to pilot and navigate through large amounts of information, to analyze and make decisions, and become proficient with the new knowledge realms in an increasingly technological society. Students will need to be lifelong learners, collaborating with others in accomplishing complex tasks, and effectively using different systems for representing and communicating knowledge to others. A change from teacher-centered instruction to learner-centered instruction is required to facilitate students to attain the new knowledge and skills. In fact, learning is an individual or solitary process. Most of the students wanted to think themselves. They wanted to design and make things, to experiment and to engage in first-hand observation. They want to learn in collaboration with peers, teachers, parents, and others when they are actively engaged in meaningful, interesting tasks. For this purpose, ICT provide can opportunities for teachers and students to collaborate with others across the country and across the globe. They also provide new tools to support this collaborative learning in the classroom and online.

## Keywords

## ICT Use in Related to Teacher, Students & School Education

### Introduction

Today, many challenges facing any developing countries are preparing their societies and governments for globalization and ICT revolution. Globalization and technological change have advanced in tandem over the past fifteen years and have created a new global economy so called “powered by technology, fueled by information and driven by knowledge”. The appearance of new global economy refers to the more serious implications for the character and principle of educational institutions. Education is one of the most basic requirement and factor that great nations are built upon. One can say that education is an investment which takes time to payoff since one must accrue knowledge and experiences. It is one of the vital key to economic development and improvement in human welfare. Presently, global economic competition grows stronger as education becomes an important source of competitive advantage, closely linked to economic growth, and a way for countries to attract jobs and investment. Additionally, education is the key determinants for a person to make a living during his lifetime. Therefore, every country in the world accept the fact that raising educational attainment as a way of tackling poverty and deprivation problem. The first principle refers to the ability of learners to keep studying as much as they want for the rest of their lives. There is no limitation for anyone to learn even if they have finished with the highest level of education. Moreover, they can further their studies individually. The second principle refers to the ability of learners to survive in the society by relying on what they have learned. The last principle refers to the learners’ attitudes towards self-development.

In order for learners to accomplish the above goals educators have recommended for teachers to integrate information and communication technology (ICT) into their teaching. ICT have become ordinary units in all aspects of human life. From corner to corner through out the past twenty years usage of ICT has essentially changed the practices and procedures of roughly all forms of enterprise within business and governance. In education, ICT has commenced to play a present role but the impact had not been as widespread as in other fields. Education is a very communally oriented activity and quality education has conventionally been connected with strong teachers having high degree of personal contact with learners.

### Objectives of Research paper:-

1. To understand the concept and importance of Information and communication technology.
2. To know the use of Information and communication technology in education.
3. Understanding the level of Information and communication technology.
4. Understanding the impact of Information and communication technology on integrated teaching.

## Information and communication technology (ICT) in schools

Information and communication technologies (ICT) can be defined as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. ICT today refers to any new technology device or application used to communicate with others. It includes three main types of technologies:

- (1) Communication technology such as communication satellite, mobile phones, and communication cables,
- (2) Computer technology such as hardware and software to create document by some authoring software, for example, word processing, spreadsheet, presentation, database, and another interfaces that were used for communicational purposes, and
- (3) Teaching material created to be used for information and communication technology such as a database, websites, films, music and photos.

Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICT also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers all over the world. It can be said that ICT is the facilitate access to remote learning resources.

### **Information and Communication Technology (ICT) can boost the quality of education in numerous ways as follow:**

- (1) ICT can transform the way that education is delivered and open the way to a new pedagogy. It can make it easier for teachers to plan and find high quality materials, and it can help students to find out more about the subjects that they are studying. Critically, new technology can enable teachers to tailor their teaching more closely to the abilities of individual learner. The use of computers is common place today in education this prediction is nevertheless as important then as it is today.
- (2) ICT can increase the students' motivation and engagement, by facilitating the acquisition of basic skills. ICT is also transformational tools and when used appropriately it can endorse the reallocation of learner-centered environment. ICT such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in

the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students.

(3) The appropriate use of ICT can activate an exemplary shift in both content and pedagogy that is at the heart of education restructuring in the 21st century. If designed and implemented properly, ICT supported education can promote the attainment of the knowledge and skills that will empower students for lifelong learning. When used appropriately, ICT particularly computers and IT facilitate new methods of teaching and learning rather than plainly allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy in its worst form characterized by memorization and routine learning to one that is learner-centered. ICT makes the learners have active learning and enhances learning mobilizes tools for examination, calculation and analysis of information, thus providing a platform for student inquiry, analysis and construction of new information.

(4) ICT supports learning encourage interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modeling real-world interactions, ICT supports learning provides learners the opportunity to work with people from different cultures, in this manner helping to enhance learners' teaming and communicative skills as well as their global awareness.

(5) ICT supports learning promotes the manipulation of existing information and the creation of real-world products rather than the regurgitation of received information.

(6) ICT enhances learning promotes a thematic, integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice that characterizes the traditional classroom approach.

(7) ICT enhances learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICT allow learners to explore and discover rather than merely listen and remember.

### **ICT Used in Education**

The potential of each technology varies according to how it is used. At least five levels of technology used in education: presentation, demonstration, drill and practice, interaction, and collaboration. Each of the different ICT print, audio/video cassettes, radio and TV broadcasts, computers or the Internet may be used for presentation and demonstration. Except for video technologies, drill and practice may likewise be performed using the whole range of technologies. On the other hand, networked computers and the Internet are the ICT that enable interactive and collaborative learning best; their full potential as educational tools will remain unrealized if they are used merely for presentation or demonstration.

ICT cannot replace teachers, but actually, with the introduction of ICT in the classroom, the teacher's role in the learning process becomes even more critical. What can and should change is the kind of role that the teacher plays. The role of students, in turn, also expands and since ICT can open up the classroom to the outside world, the community can also play a new role in the classroom. As learning shifts from the "teacher-centered model" to a "learner-centered model", the teacher becomes less the sole voice of authority and more the facilitator, mentor and coach from "sage on stage" to "guide on the side". The teacher's primary task becomes to teach the students how to ask questions and pose problems, formulate hypotheses, locate information and then critically assess the information found in relation to the problems posed. Given that ICT enhances learning is a new experience even for the teachers, the teachers become co-learners and discover new things along with their students. Teachers and students from different schools, subject-matter experts, parents, community and business leaders, politicians, and other interested parties also become involved in the learning process as resource persons, critics, mentors, and cheerleaders. They also comprise a public, and hopefully critical, audience for students' work published on the Web or through other media. Yet many teachers are reluctant to use ICT, especially computers and the Internet.

There is an increasing research on the effectiveness and benefits of the integration computer technology in education in recent years. There are many supporters who claim that there are many benefits of Internet use in the classroom such as the ability to break down the classroom's physical limitations and expanding students' experiences, development of students' inquiry and analytical skills and expanding students' experiences with visual technologies. It is considered that technology is the main support for the students learning developments and the computers are the main technology support as a tool for effective learning and teaching process.

### **ICT level of Teachers**

Teachers have to hold a list of abilities which are categorized into three levels:

- (1) Basic level with basic ICT competency to operate various kinds of software and use ICT devices for various purposes,
- (2) Intermediate level with ability to use various resources, various kinds of software and ICT devices to create the educational material, and
- (3) Advanced level with ability to apply and integrate the ICT into teaching as well as to be an expert assisting colleagues to use ICT in teaching.

## **(1) Basic Level**

Basic level focuses on the teachers' ICT knowledge and how to use them in teaching. This level includes some knowledge about hardware, software, and tools in modern foreign language classrooms. Teachers can easily gather this basic knowledge on CALL and on the Internet. They have to understand the functions of the various components of the computer and how to use a variety of software including basic word processing, database and spreadsheet functions. It is necessary for teachers to use information retrieval through the use of CD-ROMS and preparation of graphics and art works, simple desktop publishing, drill and practice activities. Teachers have to use the information in WWW, accessing and analyzing information from CD-ROM, accessing and analyzing information from tape, videos or slides, use of internet and e-mail to communicate with others. They have to use of video conference to communicate with others and use the multimedia software to create multimedia reports or multi-media presentations.

## **(2) Intermediate Level**

Intermediate level focuses on the teachers' capability to integrate existing CALL, including multimedia ones into their study programme. To explore World Wide Web resources online and offline, and use concordance programmes in classrooms. It also focuses on the teachers' abilities on basic CALL authoring programmes. Teachers must be able to demonstrate the use of a multimedia computer system with related devices in order to run programmes; to access, generate, and manipulate data; and to communicate results. They have to use imaging devices such as scanners, digital cameras, and video cameras with computer systems and software. Teachers must be able to integrate ICT into their teaching using various kinds of software and their own developed teaching materials and to be experts assisting colleagues to integrate ICT into teaching. Teachers must be able to use various kinds of computer software to create various documents, use ICT devices for various purposes as well as be able to solve basic technical problems found in using computers or ICT devices. They have to apply tools for enhancing their own professional growth and productivity. They have to use technology in communicating, collaborating, conducting research, and problem solving. They have to apply productivity tools for creating multimedia presentations and web-based products, use computer-based technologies including telecommunications to access information and to enhance personal and professional productivity, identify computer and related technology resources for facilitating lifelong learning and emerging roles of the learner and educator, apply current instructional principles, research, and assessment practices as related to the use of computers and technology resources in the curriculum, and design, deliver, and assess student learning activities that integrate computers/technology for a variety of student group strategies and for diverse student populations. They have to use of web authoring software to create educational web sites, use of audio/visual technology to create audio/visual project.

### **(3) Advance Level**

Advance level focuses on the teachers' ability to manage multimedia centers, design and implement CALL software, create a World Wide Web site, and be able to use linguistic corpus. Teachers must be able to gather various kinds of data such as text, image, audio, movie, or software from the Internet, CD ROM, and other multimedia materials as well as to communicate with others using ICT. Moreover, the teachers must be able to create teaching materials, especially the multimedia ones for their learners.

### **The Factors Affecting the Integration of ICT into Teaching**

There are two types of factors which influence the integration of ICT into teaching. They are:

(1) Negative factors

(2) Positive factors

#### **Negative Factors:**

The negative factors refer to the administrative problem and the internal problem. According to the administration and management problem, the directors or heads of schools could not allocate enough budgets for ICT. There were not sufficient computers for teachers and students. In many rural schools, computers are inadequate, some schools don't have telephone connections and access to the internet is limited. Moreover, they could not provide their teachers enough and effective training on ICT. In case of personal problem, it is concern about teachers' computer literacy, and the failure to go beyond classes in order to integrate ICT into subject areas. Some of teachers felt there was a real gap between their ICT competencies and what they wanted to do in classrooms. Many teachers had negative attitudes towards the integration of ICT into teaching or lack of confidences. According to the surveys and studies conducted with teachers and the integration of ICT into teaching, a number of variables influence the integration of ICT into teaching. Some example variables were age, gender, level of education, teaching level, and personal problem.

#### **Age**

Age was a variable to be considered for the study related to the integration ICT into teaching. It was found that old teachers who worked for a very long time said that they were older and held more responsibilities and things to do both at work and home, they felt bored to keep professional working on computer and technology.

#### **Gender**

It was found differences between male and female teachers in terms of the integrating ICT into teaching. Male teachers have more self-confidence in integrating ICT into teaching than female teachers.



## Level of Education

It was indicated that the teachers' level of education affected the teachers' ability to integrate ICT into their teaching & learning. The under graduate teachers could not enhance their students learning with ICT appropriately.

## Teaching Level

It was shown that the teachers' ICT abilities were different related to the level of their teaching. In the higher level of education, teachers tend to integrate ICT into teaching more than lower level of education.

## Personal Problems

The personal problems relate to teachers' motivation and attitudes towards the integration of ICT into teaching. It was found that teachers avoid the integration of ICT into their teaching because they were shyness and reluctance to tell the truth, time constraints, and less of self-confidence. They could not assist the students to use computers and ICT devices and they also could not solve the technical problems found in the integration of ICT into teaching. teachers were responsible for many and various duties but they were offered very low salary. Therefore, a lot of teachers were in financial difficulties and it reduced their motivation to put the effort into their work resulting in student's poor learning ability.

## Positive Factors

After training, teachers tried to find ways to integrate ICT into their teaching more effectively. Granted the budget by Ministry of Education for the development of the teachers' professional in terms of ICT integration into teaching. The primary and secondary school teachers were trained to create teaching materials, using the e-mail for communication, using the internet as resources for teaching and solving technical problems. Two months after training, a group of staff visited all the teachers for interview session and found that all the teachers showed more ICT abilities and positive attitudes towards integration of ICT into their teaching.

## Conclusion & Recommendations

- 1.The personal problems relate to teachers' motivation and attitudes towards the integration of ICT into teaching. It was found that teachers avoid the integration of ICT into their teaching because they were shyness and reluctance to tell the truth, time constraints, and less of self-confidence.
- 2.It was indicated that the teachers' level of education affected the teachers' ability to integrate ICT into their teaching & learning.



3. At the present the world revolved around technology so it is important that teachers need to be equipped not only with subject-specific expertise and effective teaching methodologies, but also with the capacity to assist students to meet the demands of the emerging knowledge-based society and the emergence of ICT.

4. Therefore, teachers require familiarity with new forms of ICT and needed to have the ability to integrate ICT to enhance the quality of teaching and learning. Teachers' attitudes towards the incorporation of ICT into teaching became more optimistic after they were trained.

5. Government tried to support the teachers to become ICT developers and users who integrate ICT knowledge and skills into their teaching properly.

6. Consequently, the Ministry of Education has conducted a lot of ICT training as professional development for teachers in primary and secondary schools. In the recent year, it provides a large number of teachers who can integrate ICT into their teachings.

7. The professional development in ICT not only improves teachers' ICT competencies, but also it helps the development of the modernization teaching methodology that is beneficial for learners to cover all the required abilities in the National Education Act.

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