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Multimedia and Technology in Learning

Franky Mantiri

Asia-Pacific International University, Muaklek, Thailand
*Corresponding Author: frankmantiri@gmail.com

Abstract This essay explores the use of computer technology and multimedia in students learning. Undoubtedly, the advent of computer technology has changed the way humans learn and do things. Moreover, "Computer has become standard equipment" (Bitter & Pierson, 2002) in everyday life. The ability to process data in a real time has helped teachers and learners to learn and obtain data and information more rapidly. Despite of all the advantages of having computer as tools for learning, the disadvantages and challenges existed. Issue such as copyright, less face-to-face interaction in education, as well as privacy continues to be the greater challenge in the use of technology. Regardless of the disadvantages and challenges of technology use in education however, the benefits of it outweighs when it comes to learning and the much readily available of information and opportunities of varieties of information that are otherwise challenging.

Keywords Multimedia, Technology, Learning

1. Computer Technology in Learning

The arrival of computers in the 1950s has change the world and the way people are doing things. This is especially true in education, business, and industries to name a few. According to Roblyer (2004), many of these trainer and educators predicted that computer technology would transform education and become the most important component of educational technology. Although it did not happen overnight, computer inspired the development of another branch of educational technology from the time computer enter the classrooms in the 1960s until about 1990, this perspective was known as educational computing.

In 1990s educators began to see computer as part of a combination of technology resources, including media, instructional systems, and computer base support systems. Computer is what usually technology are referred to, and multimedia is part of it. Multimedia as Marian-Webster Online Dictionary says: "Using, involving, or encompassing several media (a *multimedia* approach to learning)." The first known use of multimedia is in 1962. This is also the time when computer is starting to evolve into global market. According to Roblyer (2004), "For many educators, any mention of technology in education immediately brings to mind the use of some device or set of equipments, particularly computer equipment."

Ever since the invention of computer, schools are now using computer as part of the teaching and school curriculum as well are implementing computer skills as part of the learning. According to Roblyer (2004), technology integration skills (computer) can't be learned by sitting in the classroom and listening to an instructor or watching demonstration. Students must have an opportunity to navigate through a program and complete a step to create a new product. The focus must be how to use the technology resources in the classroom rather than just technical skills. On the other hand, teachers also need to improve their knowledge regarding technology such as computer. They need to be trained not only one-shot in-service, rather, an over-time and ongoing training as well as to have access to technology even after the training session.

2. Roles of Technology in Learning

The word "Media" is the plural of "Medium" that means "form of communication." In Latin, Medium means "Between". This term refers to anything that carries information between a source and a receiver according to Smaldino, Lowther, & Russel (2008). Therefore, the role of media between the source and receiver is very important to deliver the message that needed to be delivering. Thus, according to Smaldino at al., (2008), there are six basic categories of media: 1. Text, 2. Audio, 3. Visuals, 4. Video, 5. Manipulates (Objects), and 6. People. The purpose of media is to facilitate communication and learning.

The most commonly used media in learning is "Text." Text is an alphabetical character that may be displayed in any format, such as books, posters, chalk/white board, computer screen and many more. The next commonly used media is "Audio." This includes anything you can hear, such as a person's voice, music, mechanical sounds, noise, and many more. Thirdly is Visuals. This medium is regularly used to promote learning. They include diagrams on posters, drawings on a board, photographs, graphics in a book, cartoons, and so on. Other type of media is "Video." These are media that shows motion and movement like DVD, Videotape, computer animation, and so on. Manipulative

objects are things that learners can touch, feel and handle. And the last media is "People." These may be teachers, students, or subject-matter experts. People are critical to learning. Students learn from teachers, other students and adults. Therefore, computer has been found to help and improve student learning. It also has been found to be better than using books, teachers, films, or other more traditional methods (Alessi & Trollip, 2001).

The role of multimedia and technology in learning specifically computer technology in the classroom is significantly important. For instance, one of the important roles is: "creating media and links by using a computer. It allows students to create multimedia projects in which links comes' a live" (Agnew, Kellerman, & Meyer, 1996). Through media links users can easily links by clicking one button and they can select any desired buttons to see any desired event. Next one is computer can facilitate students to perform activities that without computer will be difficult and even impossible such as: Word Processor that makes a typewriter that can change and reformat pages, and a Spreadsheet makes a sheet of squared paper that recalculates numbers. The functions become easier and faster and it allows users to interact with information in completely new ways, according to Agnew at al., (1996).

Furthermore, through computer technology in learning, students can have their own self-evaluation guidelines to assess their own progress and what need improvement. They also can diagnose their problem and find help to solve the problem online through internet. "Students can also use the internet to view an extraordinary array of current information resources" (Schofield & Davidson, 2002). Moreover, they say that they believe internet can promote equity in the country school through providing rich and poor schools alike with access to the same extraordinary variety of information resources and opportunities for communication. Therefore, internet can reach beyond boundaries such as physical markets, race, gender, age and various social categories.

3. The Advantages of Multimedia and Technology in Learning

Multimedia especially computer has change the way students learn and teacher present their lessons. There are a number of advantages in using computer technology in learning, however in this paper only present a few important once.

Online information

Here the information is presented online through internet where learners from different places can access the same information at the same time. In this mode the instruction takes place at the same time, but the learners can be in different places (Smaldino at al., 2008). This is especially beneficial for long distance education or virtual learning where student have the flexibility to access information in their own time.

Simulation

Learners can have access on the real-life-situation. "It allows realistic practice without the expense or risk otherwise involved" (Smaldino at al., 2008). Also, with computer simulations schools or institutions will be able to design real-life situation scenario and test run it through a computer program. "The computer can speculate about various design ideas to determine which will work and which will not" (Bitter & Pierson, 2002).

Visual literacy

John Dewey (1897), the most influential American philosopher in education says about the important of visual aids in education (cited in Smaldino at al., 2008)

> "I believe much of the time and attention now given to the preparation and presentation of lessons might be more wisely and profitably expanded in training the students' power of imagery and in seeing to it that he is continually forming definite, vivid, and growing images of the various subjects with which he comes in contact in his experience."

Students will learn more and understand better through visual aids such as pictures, video, and movie. Zimmer (2003) says multimedia presentation keeps student alert and focused. On the other hand, students need skills of their own to analyse and interpret information, such as what Lambert & Cuper (2008) says "so much of today's media is in visual form, students need visual literacy skills to understand information that integrates images, video, sequences, design, form, symbols, color, 3D, and graphic representations. They need to know how to interpret visual messages and look beyond the surface to determine deeper meaning in what they see."

Teachers must understand that children under 12 years of age interpret visuals section by section rather than as a whole. Student who are older, nevertheless, tend to summarize the whole scene and report a conclusion about the meaning of the picture (Heinich at al., 1993). Moreover, different student with different background and culture also perceived visual materials in different ways. Therefore it is important for teachers to know their students learn and accommodate their teaching to meet their students' styles.

Cost effective

Allesi & Trolip (2001) say that computer-based instruction at least reduces the time spent learning. In addition, using technology for learning has logistical benefits. Materials can be distributed more cheaply and easily. It is easier to ensure all users have the most recent version of the materials. Learners can access the materials at their convenience. Accessibility is facilitated for people with disabilities and dangerous, expensive or unique environments can be simulated to improve access.

Mass data storage

Imagine if there is no such thing as a computer to store and save data. There will be a huge pile of papers and documents that needed supersize rooms for storage. The advent of computer has helped to solve this issue. Government departments as well as private companies has benefited from computer technology. "Government agencies collect vast amounts of data that must be processed and stored in various ways" (Bitter & Pierson, 2002).

4. The Disadvantage of Multimedia and Technology in Learning

Despite of all the advantages, however, there are some disadvantages of computer technology in learning. Following are some of it.

Copyright issue

Some individuals have taken advantages of the online resources illegally. "Students and teachers need to be aware of copyright issues when using digital resources available on the internet" (Smaldino at al., 2008). Internet has made it easier to copy from a variety of digital materials such as text, visual, audio and video. (Smaldino at al., 2008). Therefore, using information from Internet resource has to be used appropriately and accordingly.

Dehumanize teaching

Some observers have argued that technology in learning has widespread negative impact in the process of teaching and learning. One of the reasons was that many teachers and lecturers in instructional technology were treating students as if they are machines rather than human beings. Heinich at al. (1993) said teachers have to be aware of this and not to dehumanize students learning as a machine. Furthermore they argue that if teachers perceive learners as machines, they will treat them as such, with or without the use of instructional media. If teachers perceive their students as human beings with rights, privileges, and motivations of their own, they will treat them as such, with or without the use of instructional media. In other words, it is not technology that tends to mechanize people but the uses to which people put technology.

Privacy and Security

Bitter & Pierson (2002) said that because the internet has become a true community of people, it faces some of the same serious issues that plaque real communities. Just as people put up fences around their yards and alarm their cars to protect their families from outside harm, so will they also need to take care to protect themselves from potential privacy invasions and other dangers lurking within the internet society. Moreover, children's use of internet is increasing, and thus safety and privacy issues become a serious concern for educators and parents. Therefore, guidance from parents and control by teachers as well as "filtering" software will give varying amounts of control for students and can help them use internet appropriately.

5. Conclusions

There is almost no end to the list of things that can be done by students and teachers in using technology in teaching and learning from being the medium of instruction with online information, simulation, visual literacy, cost effective, to mass storage. Like a coin, there are advantages as well as disadvantages side in the use of technology in education as well as in daily lives. With the availability of technology, educational software and applications become readily available in the market to assists teachers and students in learning as well as to obtain online information. All these are meant to help learners learn better and have more understanding whatever they are trying to achieve. Technology has become an integral part of our society whereby people are required to master certain skills in order to be able to operate it. The use of computer, internet, cellular phone, video, MP3, I pod, I phone, I pad and many more gadgets are now connected and can't be separated from human life, especially for younger generations. As a result, students learn more and faster than previous generations.

Despite of the enormous advantages of the use of computer technology in teaching and learning it still requires control by parents as well as teachers. Also, there is a need to address issues such as the copyright, illegal usage of software and data, also the issue of privacy and dehumanization of students as learner. These are important issues that directly affect students, teachers, and parents that in turn can affect teaching and learning processes. The author suggests that there needs to be a system that could be used to promote the use of technology in schools for the benefits of teaching and learning but at the same time a control mechanism needs to be set up to monitor the responsible use of online information.

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