

## THE IMPACT OF EDUCATION TECHNOLOGY IN TEACHING AND LEARNING

**Dr. Himendra Balalle**

National Institute of Business Management

**SRI LANKA**

himendrab@gmail.com

**Dr. L. Tudor Weerasinghe**

Sri Palee Campus of the University of Colombo

**SRI LANKA**

tudor@spc.cmb.ac.lk

### ABSTRACT

The extraordinary progress and technological growth in the world are witnessed. In recent years, technology has also emerged through laptops, smartphones, mobile phone software, websites, text messages and social networking platforms. This advancement indicates that technology in various environments, like the education sector, has benefited greatly. We can see the value of education technologies with different apps for distance education, the internet, teachers and students themselves. This article aim is to provide a summary of the significance and use of education technology in the classroom.

**Keywords-** Educational technology, Technology and learning, PESCEP Factors , Teaching strategies, Learner–Centered Education.

### INTRODUCTION

The role of today more than anything, using education technology is of great importance. Instructors are not trained to utilize the equipment themselves, whether they are aware of its benefits in education.

Educational technology is a systemic, structured method of implementing modern technology to enhance educational output. It's a comprehensive method of conceptualizing instructional procedure implementation and assessment, Reading, Coaching, and helping implement new teaching methods. It requires teaching resources, strategies and work-related organization, the actions of all members in the educational phase. Educational technology has no single word still. Different countries use different words and synonyms including instructional technology, educational facilities, teaching technology and so on.

Terminological variations exist mainly on the basis of approaching mechanical features and using new equipment, and not their direct use in education. There are different views among teachers in social and technical sciences. Applying educational technologies also required expertise from many areas: pedagogy, psychology,

Didactics, informatics, informatics etc. Because of this variety, educational technology often has diverse perceptions, where each author describes the definition of educational technology according to their needs. Educational technology is also not sufficiently implemented, mainly due to the shortage of necessary funding of the educational institutes.

### DISCUSSION

Definitions of educational technology have various approaches. According to the Jacquetta Bloomer (1973), education technology defines as the implementation of science information

Practical learning conditions. As per the Richmand (1970) Educational technology has sufficient architecture for learning, Situations, consideration of the goals of instruction or preparation, best means of training. Education technology is an applied or functional research which aims to optimize educational impact by regulating facts such as education, the actions of pupils, the conduct of instructors and student interconnections. (Takshi, 1971)The philosophy and practice of the planning, creation, usage, management and assessment of learning processes and tools are instructional technology.(Seels & Richey,1994)Education technology requires the disciplined implementation of expertise to enhance research, teaching and/or efficiency (Spector, 2015)

Erly provided a broader definition of education technology in 1963 as Audiovisual communication is the education and practice division devoted to the creation and usage of signals that guide the method of learning. It undertakes (a) researching the special and relative strengths and shortcomings of picturesque and non-representatory messages that may be used for whatever purposes throughout the learning process; and (b) structuring and systematizing messages by men and instruments in an instructional environment. These organizations provide the design, development, collection, management and usage of all components and full instructional programs. Its realistic purpose is the effective use of any contact tool and channel, which will help to improve the maximum capacity of students.(Ely, 1963)

Due to the above definitions, educational technology is a very descriptive term. It applies to the usage of scientific techniques for its work after the whole teaching phase has been structured. It provides a way to enhance learning and teaching systems. Educational technology is linked to almost all teaching, learning, training processes such as the recognition of educational goals, preparation of the teaching environment, training of learning resources and educational materials, choice of learning strategies, and teaching strategies and input on teaching and learning processes.

There was a period when education technologies just meant audio-visual learning devices. Education technology today has a rather large concept. Now the idea of educational technology is being utilized to increase the effectiveness of studying and teaching using processes, strategies, time management, reduce the cost and geographical barriers. In order to prepare, coordinate, encourage and monitor technological and instructional systems, education technology is called a structural and science activity according to some educationalists. Based on the above argument, we can define education technology as: a technical methodology of teaching, which purposes being to continually simplify the role of teachers in the modern learning environment in a technological platform where the teacher meets the students.

## **PESCEP FACTORS IN EDUCATION TECHNOLOGY**

Education is an art as well as scientific. Education may then be analyzed and separated into small details, components and ingredients of learning. These details, components and ingredients can be trained, instructed and studied. Education technology depends therefore on many external factors, including political-economic, social-cultural, educational and psychological factors.

### **POLITICAL-ECONOMIC FACTORS**

The implementation of education technology in any country depends on a variety of factors. One of the most significant is the political element. Political considerations contribute to the

political conditions of the region, Government policies, Government priorities and interests. How the government set the strategy of the education sector in the advancement of education technology? If the governing has the potential of utilizing technology, especially in government-owned institutes, so it may make efforts to improve it. Political considerations towards the development of infrastructure may also be seen to affect educational technologies. It plays an essential part in and spreads the connectivity in the broadcasting and telecommunications sector. The price of data and the access easy to the internet is a basic consideration in this process. Data rates and fast internet connectivity are a central factor in this phase. If the government competes with telecommunications providers, it will cut the price of data and government can reduce tax-free for telecommunications infrastructure expenditure which will support the growth of the education technology.

Economic conditions still play a significant role in the growth of education technologies. Funding is the foundation of every initiative. It is not feasible to build, disseminate and train any technology without resources. For Learning Management System and other equipment in the field of instructional technology and the construction of recording rooms, Smart classrooms, an economic grant is required. Without the required capital, no equipment can be obtained, or recruit qualified staff and tests can be carried out.

## **SOCIAL-CULTURAL FACTORS**

Awareness the surrounding of the education technology phenomenon is essential when we consider the social-cultural factors; it will improve the understanding of existing social and cultural context by students, administrators, analysts and business stakeholders. This better awareness of unsound beliefs, prejudices, and sociocultural realities could relate to practices that lead to more favourable societal outcomes instead of just trying to implement the education technology, which exacerbates the issue itself that it promises to address.

The education framework of the 21st century, owing to its presence in curriculum design, teaching and learning, is said to push technology. Tripathi (2018) notes that increasing connectivity to devices, creation of technological applications for learning, advances in the implementation of artificial intelligence (AI), and the on-going emergence of the interactive, mixed or increased reality. Therefore, the importance of evaluating the social effect of technology-based education is important on the well-being of society and the country. Education powered by technology can have negative or positive social impacts (Raja and Nagasubramani, 2018).

In education technology, one will have a promising future; there is knowledge of the community, there is a dominant leadership, and the influence of technological words is evident in the veins of culture. The school atmosphere is then required to discuss technological aspects through students, parents, teachers and educational experts.

## **EDUCATIONAL FACTORS**

The psychological aspects tend to be very helpful. Education and preparation of teachers are the core components of education. Teachers will prove to be a breakthrough in education technology if well-structured preparation is offered. These teachers will operate in the classroom, utilizing different education technology approaches such as usage of machines, devices and tools like computers, projectors and digital whiteboards to ensure that instructional goals are accomplished. This new experiments will provide successful leadership and guidance

by efficient improvement and discovery for revolutionary inventions and different measurements.

Education technology is focused on the use of technological equipment in conjunction( Raja and Nagasubramani, (2018). The author further argued that educational technology allows learning more enjoyable and makes it very simple, comfortable and efficient to pass information. Education technology lets students or young people gain fundamental awareness and comprehension of the topic (Education Base, 2014).

## **PSYCHOLOGICAL FACTORS**

Psychology is one of the aspects that matter about individual actions every day. The effectiveness and failure of different tasks that we carry out every day rely most frequently on our daily psychology. These issues emerge mostly from psychiatric causes such as tension, anxiety, depression, loss of energy, isolation, helplessness, lack of computer literacy, fear for the technology and phobias. These psychological issues may contribute to disappointment in their academic achievement, anxiety tests, low results, loss of self-confidence, unreasonable concerns and anxiety or unease that interfere with their ability to work normally.

Further, Psychological considerations include academics, students and institutions' engagement levels, patterns etc. The effect of psychological influences involves teachers' inspiration, learning to educate, focus and interest, etc. Much depends on the particular desire, expertise and efforts of teachers and students in educational technology. With the newest awareness and updates in education technology, teachers will use them and change the in the college climate.

It is necessary to incorporate multiple results of psychological factors that are successful in education technology framework rather than introducing the single impact in terms of evaluating psychological factors that may need to be taken into account when developing potential education systems.

## **SCOPE OF EDUCATION TECHNOLOGY**

This is the information technology era. The application of science and technology is evident in our everyday lives. Science and technology have led to the efficacy, development and perfection of human job processes and goods. In the case of educational institutes, technology makes it easy to view and the procedure interactive with less time. In the broader context, Educational technology involves the creation, implementation and assessment of teaching, curriculum and training programs, techniques and aids.

The reach of a scope of education technology in a broader context depends on its interpretation. The technology in education is an applied or realistic analysis designed to optimize educational results by monitoring different variables such as educational purposes, content, the atmosphere for learning, teaching material, student-teacher activity and interactions between students and teachers. It is required to address how hardware and software can be utilized to render the instructional process more reliable and effective. Education technology covers instructional goals, media and methods collection and usage, resource utilization and Assessment.

The scope of education technology can be divided into three categories.

1. Educational Technology and Educational Testing ( online exams, assessments, peer reviews etc.)
2. Educational technology and academic procedures ( content development, Teacher training and professional development, teaching and learning strategies development etc.)
3. Educational Technology and Educational Administration procedures ( Apply the technology for general education administration)

It leads the instructor on the teaching sciences, the students on the learning sciences, academic managers on the management skills and Track teaching-learning activities and instructional planners, It will help efficiently to develop and transact the program. In addition, it promotes individualized education, group education and mass education through the mass media.

The spectrum of education technologies was, to some degree, restricted before the fourth generation of distance learning. It was utilized until the beginning of the 1990s and was limited to the usage of multimedia, telecoms, audio-vides, laptops, asynchronous content. In the first and second waves of online learning, the reach of educational technologies has grown from the early 1990s to the present. Extensive educational technology penetrated the educational situation and could address much of the challenges in the learning phase. Over this era, adaptive and autonomous learning, wireless and wired, electronic or e-learning, hybrid or blended, on-campus and online experience have been utilized extensively.

## **DEVELOP TEACHING STRATEGIES WITH EDUCATION TECHNOLOGY**

Educational Technology implementors are responsible for regulating, designing and creating the teaching of art to achieve technical academic results of different laws, techniques and instruments. Education strategy consists of two words: instruction and methods. Teaching practice is an interacting phase through which students and teachers accomplish the required objectives.

Literature defined a variety of techniques employed in the sense of teaching and learning. These may be in the context of implementation approaches such as a social or student-teaching strategy, or a student-centred or bottom-up strategy (Garrison & Anderson, 2003). Essentially, a technique is preferred by lecturers since it is simple to execute (Garrison & Anderson, 2003). Teaching techniques are about the methods to establish optimal learning experiences for assistants, teachers or instructors. This is related to the essence of the task in which the instructor and student would participate during the course (Lasry, Mazur, & Watkins, 2008). In fact, teachers chose teaching methods depending on their knowledge or abilities (Liu, Gibby, Quiros, & Demps, 2002). In reality, when choosing a technique, a lecturer wants to look at a variety of main features. These characteristics include a) the curriculum; (b) past awareness of students; (c) the preferences of students; (d) student behavioural styles (Liu et al., 2002). What is also critical is to recognize that a 'one-size-fits-all teaching method cannot fulfil all students' needs (Felder & Brent, 2005). In reality, the best condition is one that meets the students' varied needs. It can then be inferred that the teaching operation is more than just Pass of details (Mazur, 2009).

Teachers must ensure that students grasp principles and that they can reason and process knowledge in real-life circumstances (Weller & Hopgood, n.d). The emergence of technology that can render education successful has provided opportunities to explore innovative ways of teaching and learning (Simelane, 2008). It is pointed out that the structure and criteria of higher education shift from classroom to computer-based learning (Katz, 1999, ). Twigg (2003)



considers that higher educational establishments would be much more successful if the instruction of teachers involved technology and the internet. The value of utilizing apps is that of studying online. Technology helps to consider the complete image and think beyond the box so that the practice can be observed (Anderson, 2004).

There are many considerations, including curriculum initiatives aimed at promoting the learning phase and growing instructional productivity until the instructor starts to choose the required teaching techniques. The key components of teaching strategies are as mentioned below.

- (1) Curriculum policies, the model of teaching exercises will suggest.
- (2) Educational policies that are beneficial for meeting educational targets.
- (3) These major works in a behavioural modification in the field.
- (4) In analysis and structure, these functions are essential.
- (5) The teacher's job is to maximize loyalty and to increase productivity in his teaching.
- (6) Develop the learning method and establish a framework for the study.
- (7) arrange workshops to get sufficient knowledge, vigilance, critical thinking and growth.
- (8) Setup the assessments and evaluation methods.
- (9) Learning Management system setup and arrangement
- (10) Teacher's curriculum program stays in control and needed improvements.

## **MICROTEACHING METHODOLOGY**

Microteaching is now very relevant in the teaching of numerous topics. This approach to school teaching through different lessons was clearly amazing. The Dearing Committee (1977) suggested that student expertise in universities and colleges be established in the field of communication skills. It was assumed that quality teaching was important to improve the capacity of students to interact through their higher learning process. Students watching the video have been proven effective in improving their skills.

Microteaching is claimed to be an unhealthy mode of play, and the abilities learned cannot be internalized. The critique loses substance because teachers are driven to better themselves, and the analyst is, therefore, willing to offer good input. Repeated studies found that microteaching created remarkable changes in teaching skills over a period of time.

## **LEARNER-CENTERED EDUCATION**

Learner-centred education is a method that is encouraged in teaching more in online education. Teachers with an emphasis on learners should not use a single form of instruction. This methodology highlights a number of approaches focused on what students understand, change the position of teachers from knowledge suppliers to promoting student learning. Conventional lessons also contribute to students who are inactive learners who do not take accountability for their own learning. Learner-centred education stresses the individual who is studying (Weimer, 2002). Learning-centred training relies on the learning phase. Both sentences describe their important function in the learning process. The term student-oriented instruction is often used, although certain teachers may not like it as it seems that it emphasizes on the user, it seems like students are better motivated and the teacher continues to play a critical role (Blumberg, 2004).

The learning approaches focused on students include constructive learning, in which students solve issues, address questions, propose questions on their own, speak, clarify, debate or brainstorm in class. The cooperative learning in which students collaborate in teams on problems and in projects in circumstances that assure positive interdependence and accountability; and inductive teaching and learning. Case-based curriculum, case-based preparation, problem-based learning, project-based learning, exploration learning and just-in-time instruction are among inductive approaches. Student approaches have been found to be repeatedly preferable to a conventional instructor strategy, which implies whether the outcomes measured are short-term mastery, long-term retention or of course, depth of understanding content, logical thought acquisition or innovative problem-solving abilities.

Online learning platforms such as Moodle, Canvas are developed to deliver and achieve Learner Centred Education. Multiple functions are used to facilitate independent learning. These programs enable the incorporation of various applications to facilitate measurement and greater engagement with the students. Many paid Learning Management Systems often provide educational institutions with personalized features to reach their educational objectives.

Keller, an American psychologist, first described his method in 1968 in a paper entitled 'Goodbye Teacher '. He outlines five important features: The technique used in the US is more university-level. They have programmed learning dimensions, and the training system contains appropriate levels. Automatic learning is used in act linked accessories under this student-controlled. After a lesson, the student and the instructor determine that after how much work they can practice at their own rate, and they are still willing to work themselves. Teacher's tutorial - will be available to aid with training and will be held in small classes. The instructor guides the students, and there are also motivations. Students are more experienced and self-disciplined because they can handle their own education. In Keller Strategy, a self-study order is used. Each student learns by his own approach and speed that offer individual learning opportunities. Keller's analysis is dependent on the master's degree on the show. Students that may not succeed in self-learning must be transferred to the next batches to constitute the studies.

## **INSTRUCTIONAL TECHNOLOGY**

As defined by Eastman (2007), Instructional technologies include students utilizing individual response in the classroom to address questions posted via Powerpoint presentation. The Instructors asks a query through a Powerpoint presentation, and the students press their answers individually. Technology will also be used to monitor a single student's responses immediately and display the overall performance. Lectures get immediate reviews and students can share their opinions and see with this technology. (Terrerri and Simons, 2005) Technological developments in teaching and studying have revolutionized (Aristovnik, 2012)

With the advancement of technology, video conferencing systems are providing live contact with the lecturers and students. It is possible to connect through video, voice and chat at the same time avoiding the geographical barriers. The whiteboard functionality gives teachers the opportunity to write, and teachers should invite students to write based on the lesson specifications. Also, for the individual or group presentation, the students may join the classroom online.

In all segments of schooling, from primary schools to colleges, the open-source learning management framework Moodle is already widespread. It is cheap, scalable, adjustable and

has several standard features that make it popular. It can be used in more than 100 languages. More than 54,000 active pages from 225 countries, with 10 millions of users are currently registered (Moodle, 2019).

Kareal, Klema (2006) comparing the specific characteristics of some open-source e-learning frameworks, it finds that Moodle is amongst the most capable of adapting, an essential aspect of successful education as illustrated, and communicates the terms user-friendly learning systems through all comparative systems. Explored how a Moodle course was introduced as an expansion of a conventional university learning framework and found That the Moodle eLearning platform is easy to use and offers good communication tools, discussion areas, group space, workplace and making learning more interesting(Chen et al. 2011)

The quality of interactive technology relies on how it affects the personal features of the learning method topic and Outlook for its growth. Therefore, subject-oriented learning is a focus versus information-based learning. The usage of technologies dependent on individuals means improvements in the instructor and student role to democratize their partnership that will help to upgrade the internal roles of the student, help to build own career and establish the appropriate circumstances for self-realization (Gushchin, 2012).

## CONCLUSION

Educational Technology and concept benefit from a strong understanding of the technology and the approach to online teaching structures. Human intelligence has a significant role to play in developing strategies and information. The technology and concepts can be influenced by experiential and social processes. Educational technologists essentially and more commonly aim at boosting productivity, that is, intellectual development and smoothing the academic process. To successfully implementation, every aspect must be taken into account - technology implies far more than machines. Education technology may play a critical position in the next five years; in the short run, conventional colleges will not operate and academic offices may be substituted by Learning Management Structures with on state-of-the-art technology.

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