

THE ROLE OF EDUCATIONAL TECHNOLOGY IN LEARNING

Rosida Tiurma Manurung¹, Muhammad Nasir², Syarifuddin³
Universitas Kristen Maranata, Bandung, Indonesia¹, STIQ Amuntai, Amuntai, Indonesia^{2,3}
Rosida.tm@psy.maranata.edu¹, nasirmuning@gmail.com², Syarifuddin.stiq@gmail.com³

Abstract

The rapid development of information technology in the current era of globalization cannot be avoided, its impact on the world of education. Global demands require the world of education to always adapt technological developments to efforts to improve the quality of education, especially adjustments to the use of information and communication technology for the world of education, especially in the learning process. This research uses the library research. Educational technology is the application of scientific knowledge to learning so that learning objectives can be achieved effectively and efficiently, which are not only limited to tools and goods or hardware but also software and brainware. In the development and utilization of learning technology there are still three basic principles that is: 1. system approach, 2. learner centered, 3. utilizing learning resources. The study results illustrate that educational technology has a very crucial role in learning. So it can be said that the inventions of educational technology education are a unity that cannot be separated.

Keywords: Technology, media, Education, Learning

INTRODUCTION

Nowadays, humans are very dependent on technology. This makes technology a basic need for everyone. From children to adults, experts to ordinary people use technology in various aspects of their lives. Today's technology has developed very rapidly.

The rapid development of information technology in the current era of globalization cannot be avoided, its influence on the world of education is inevitable. Global demands require the world of education to always adapt technological developments to efforts to improve the quality of education, especially adjustments to the use of information and communication technology for the world of education, especially in the learning process.

Especially in the current conditions of the Covid-19 pandemic causing some daily activities to be slightly disrupted, the minister of PAN_RB (State Apparatus Empowerment & Bureaucratic Reform) Tjahjo Kumolo issued a circular which basically stated an extension of the period of working from home (WFH) & adjustments to the work system. However, that does not mean that public services are abolished, but can be done online or if manual services are still available, you must apply the predetermined protocol. This also applies to education, with the abolition of the National Examination, studying at home through certain applications, online lectures, online tutoring & seminars are examples of services in the education sector that accelerate the implementation of education in the 4.0 revolution era. Based on the several cases above, according to the role of technology in the education sector amid the Covid-19 pandemic, educators and students are expected to be able to adapt and utilize technology.

Policy enforcement social distancing or physical distancing which is the basis for implementing learning from home with the use of technology as a learning medium which suddenly, it's no wonder that it shocked educators and students, including parents. Technology-based learning has indeed been implemented in the last few years in the education system in Indonesia.

However, online learning that took place during the Covid-19 pandemic shocked almost all districts/cities, provinces, central and even internationally. Because many educators, students and the public are not ready to face the era of revolution 4.0, online learning in the midst of the Covid-19 pandemic seems to force all humans to be ready for current technological developments.

The existence of technology is currently considered very important in human life as a support in carrying out various activities both in doing work and in terms of education. Educators can use technology to become learning media or mediators in conveying knowledge to students through several applications, such as zoom, google classroom, google meeting or whatsapp group. By using learning media above, educators can make interesting and not monotonous material explanations so that students are interested and remain enthusiastic in participating in these teaching and learning activities.

However, many students complain that online learning is deemed ineffective because students are required to learn self-taught (on their own). Many parents are unable to teach material contained in books, and are only able to guide, constrained by networks, inadequate technology, to signal which is unstable.

Of the many complaints, it can be a challenge for educators, how do they keep motivating students in doing this online learning[1, p. 59]. An educator must be able to innovate himself and his students, meaning that the teacher must be able to arouse the spirit of motivation in students by using a variety of interesting learning methods. With online learning, educators must not forget their duties to continue to provide material explanations to their students and not just give assignments. That is what makes students' enthusiasm for learning decrease, because they feel burdened by the piling up of assignments.

METHOD

The method used in this research is library research, what is meant by library research is research activities carried out by collecting data in the form of books, journals, and the results of previous research related to the object of this research. The data collection method uses the help of the internet to browse through various references to previous books and research journals that are appropriate to the topic of research discussion[2, p. 70].

RESULTS AND DISCUSSION

First quote *educational technology is a field* The 1972 definition of educational technology states that educational technology is *field* involved in efforts to facilitate learning, both at the preparatory stage through activities of identifying, developing, organizing and using all learning resources as well as in the learning process itself.

As for the second quote *educational technology is the study* is the definition of educational technology in 2004 which is formulated through creating, using, managing processes and learning resources that are appropriate as studies) and ethical practices in facilitating learning. This is where the two definitions have the same character and orientation to understand educational technology not as an established discipline of knowledge such as psychology, sociology, and economics, but as a field of scientific study[3, p. 60].

The word technology according to the Greek "technologia" which according to the Webster Dictionary means systematic treatment or handling something systematically. While techne is the basis of the word technology, it means art, ability, knowledge or expertise, knowledge skills. So educational technology can be interpreted as a handle or systematic implementation of education. Meanwhile, according to language, technology is techne, Greek, which means art, handicraft, or expertise. For the ancient Greeks technology was recognized as a special activity, and as knowledge[4, pp. 1-2].

As an abstract process of educational technology. Educational technology can be understood as a complex and integrated process that involves people, ideas, procedures, equipment and organizations to analyze problems, find ways to solve problems, implement, assess and manage solutions to these cases which cover all aspects of human learning. (AECT, 1997). In line with this, the emergence of educational technology was born from problems in an education. Educational problems that arise at this time include equal distribution of opportunities to obtain education, the relevance and efficiency of education and the improvement of the quality/quality of

education. A serious problem that is still being felt by education, starting from basic education to higher education, is a quality problem, of course this can be solved through an educational technology approach. There are three basic principles that can be used as a reference in the development and use of learning technology, that is:

1. *system approach* namely a sequential and directed way of trying to solve problems, meaning seeing everything as a whole with all the components that are attached to each other.
2. *learner centered* that education, learning and training efforts should focus on students.
3. *utilizing learning resources* students learn because they interact with various learning resources optimally and varied[5, p. 52].

Thus the problem solving effort in the educational technology approach is to use learning resources. This is marked by changing the term from educational technology to learning technology. In the definition of learning technology it is stated that "Educational technology is theory and practice in the design, development, use, management, and evaluation of resources and processes for learning".

It can be concluded that educational technology is the application of scientific knowledge in learning so that learning objectives can be achieved effectively and efficiently, which are not only limited to tools and goods or *hardware but also software and brainware*[6, p. 58].

Information and communication technology has three main functions used in learning activities, this is:

1. Information technology as a tool, ICT is used as a tool for teachers or students to assist learning, for example in managing words, managing numbers, creating graphic elements, creating databases, creating administrative programs for students, teachers and staff, personnel data, finance and etc.

2. Technology functions as science. Technology is part of the disciplines that must be mastered by students. For example, ICT becomes local content in schools, both public and private.

3. Information technology becomes materials and tools for the learning process. Technology is interpreted as a learning material as well as a tool to master a computer-assisted competency. In this case the computer has been programmed in such a way that students are guided in stages using the principle of complete learning to master competence. In this case the position of technology is not unlike that of a teacher who functions as: facilitator, transmitter, motivator, and evaluator.

4. ICT also serves to minimize the gap in mastery of the latest technology, especially in the world of education. The implementation of ICT-based education has at least two advantages. First, as a motivation for educational implementers (including teachers) to be more appreciative and innovative. Second, provide broad opportunities for educators and students to take advantage of every potential that exists to obtain unlimited sources of information[7, pp. 8–9].

The emergence of information and communication technology with the various programs it offers has changed millions of people in this world. There are various benefits and positive aspects derived from the variety of applications offered by ICT. Many things that were previously unimaginable are now present and enrich the color of life. In fact, today's human life is progressing very rapidly due to the influence of information and communication technology. However, many also feel uneasy because of the various negative impacts of technology. It must be honestly admitted that information and communication technology does not only offer positive aspects but also brings negative aspects. From the aspect of morality, for example, ICT has become a medium for spreading various behaviors that violate religious and social norms. If used wisely, information and communication technology actually provides many benefits[8, p. 2].

At this time, public schools and private schools began to try to rearrange their education system. Many school programs are offered to the community, both majors and school status, namely SSN, superior, model, international, acceleration and infrastructure. What is clear is that

school changes to face the global world must be prepared from quality human resources so that they are able to think about creating educational designs, have good management tips and are not stuttering about education.

So it can be said that educational innovation and educational technology are an inseparable unit. Innovation is the object and educational technology is the subject. The existence of technology must be interpreted as an effort to increase effectiveness and efficiency and technology cannot be separated from problems, because technology was born and developed to solve problems faced by humans. In this regard, educational technology is also seen as a product and process. It can be concluded that educational technology is not only a science but also a source of information and learning resources in accordance with educational needs that can facilitate the learning process[9, p. 95].

Educational technology is the study and practice of ethics to facilitate learning and improve performance through the creation, utilization and management of technological resources appropriately. Educational technology is a field that has an interest in facilitating the learning process and improving performance through the design and proper management of technological resources. Educational technology is a field of applied science that synergistically combines several disciplines with the aim of facilitating the learning process, improving the quality of learning, and improving performance[10, p. 3].

The role of technology in learning is to facilitate the formation of collaborative relationships and build meaning in contexts that are easier to understand [11, p. 3] In detail, technology can be directed to:

1. Build a collaborative communication network between teachers, lecturers, students and learning resources. Some online applications that can be used for telecommunication are skype, yahoo messenger, facebook, zoom, google meet and other networks used.
2. Provide a variety of complex, realistic, and secure problem-solving environments. Technology that can be used to provide a comfortable environment is *hypermedia* and *software* that can be used to create projects.
3. 3. Actively constructing and shaping meaning via the internet to search for the latest research, photos, videos. This can help students not only enjoy browsing, but can learn and understand and know what they are learning[12, p. 57].

Educational technology plays a very important role in the educational revolution that occurs, especially in the 21st century educational revolution and especially in the fourth revolution which is called education 4.0 (four point zero). At this stage the function of the teacher is not as central in the learning process, but turns into a student-centered where the teacher is only a facilitator for providing the learning needs of students in an effort to prepare learning resources and media.

CONCLUSION

Educational technology can be interpreted as a guide or systematic implementation of education. As a process of educational technology is abstract. In this case, educational technology can be understood as a complex and integrated process that involves people, procedures, ideas, equipment and organizations to analyze problems, find ways to solve problems, implement, assess and manage solutions to these problems which cover all aspects. human learning. Then there are three basic principles that need to be used as a reference in the development and utilization of learning technology, namely: 1) System approach, 2) Oriented to learners (learner centered), 3) Utilizing learning resources as much and as varied as possible (utilizing learning) resources). Thus the problem solving effort in the educational technology approach is to use learning resources. This is marked by changing the term from educational technology to learning technology. In the definition of learning technology it is stated that "Educational technology is theory and practice in the design, development, use, management, and evaluation of resources and processes for learning". Information and communication technology has three main functions used in learning activities,

namely: 1) Information technology as a tool, 2) Technology functions as science, 3) Information technology as materials and tools for learning, 4) ICT also serves to minimize the gap in mastery of the latest technology. Technology also has a role in learning, namely facilitating the formation of collaborative interactions and building meaning in contexts that can be more meaningfully understood.

REFERENCES

- [1] M. Latifah, Syarifuddin, and F. D. Mobo, 'EFFORTS TO IMPROVE UNDERSTANDING OF WHOLE NUMBER OPERATIONS THROUGH APPLICATION OF CONTEXTUAL TEACHING AND LEARNING (CTL) TO CLASS III STUDENTS OF MIN DARUN NAJAH SUNGAI PANDAN', *Int. J. Educ. Sociotechnology IJES*, vol. 2, no. 2, pp. 59–64, Jul. 2022.
- [2] M. Zed, *Metode Penelitian Kepustakaan*. Jakarta: Yayasan Pustaka Obor Indonesia, 2008.
- [3] E. Sukban, *Sejarah & Paradigma Teknologi Pendidikan untuk Perubahan Sosial*. Jakarta: Prenadamedia Group, 2016.
- [4] E. Switri, *Teknologi dan Media Pendidikan Dalam Pembelajaran*. Pasuruan: Penerbit Qiara Media, 2019.
- [5] M. Japar and dkk, *Media dan Teknologi Pembelajaran PPKN*. Surabaya: Jakad Publishing, 2019.
- [6] N. Syafriaedi, *Menjadi Guru Hebat di Era Revolusi Industri 4.0*. Yogyakarta: Depublish Publisher, 2020.
- [7] F. Ahmadi, *Guru SD di Era Digital (Pendekatan, Media, Inovasi)*. Semarang: Pilar Nusantara, 2017.
- [8] N. Naim, *Menipu Setan*. Jakarta: Media Komputindo, 2015.
- [9] S. Lestari, 'Peran Teknologi dalam Pendidikan di Era Globalisasi', *EDURELIGIA J. Pendidik. Agama Islam*, vol. 2, no. 2, Art. no. 2, Aug. 2018, doi: 10.33650/edureligia.v2i2.459.
- [10] A. H. Elyas, 'PENGUNAAN MODEL PEMBELAJARAN E-LEARNING DALAM MENINGKATKAN KUALITAS PEMBELAJARAN', *War. Dharmawangsa*, no. 56, Art. no. 56, Jun. 2018, doi: 10.46576/wdw.v0i56.4.
- [11] Syarifuddin, Mardiana, and S. E. Lestari, 'Constructivism Based Blended Learning for Online Learning Madrasah Ibtidaiyah Students', *Proceeding*, pp. 1–6, Dec. 2021.
- [12] M. Yaumi, *Media dan Teknologi Pembelajaran*. Jakarta: Prenamedia Group, 2018.