

# The Role Of Educational Technology In Learning Innovation For Community Education Development

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**Abstract.** The development of educational technology is in line with the development of science and dynamic human civilization in line with human needs. Constructing knowledge through community education that is systematically arranged in innovation through the educational curriculum, thus requiring education actors to study more carefully, quickly, efficiently, and competitively. Educational Technology Products have not been used optimally in learning, training and technical guidance are needed and their use in the development of community education. The progress of the world of education cannot be separated from technological advances. Through technological advances that synergize with education can simplify and improve the quality of learning. The use of educational technology for the learning process can make a good contribution to improving the quality of learning through learning innovation. The utilization of ICT can expand access to education services and improve the quality of community education development. Educational technology demands that educators in general education can apply it and facilitate students to solve learning problems and improve their performance with various conditions and circumstances that we always feel quickly. The greatest increase in performance is in the field of education, especially teachers and lecturers, and must be able to make educational changes to improve the quality of public education.

**Keywords:** educational technology, learning innovation, public education.

## 1 Introduction

In Indonesia, developing community education is an endeavor to educate individuals outside of the school context to provide literacy skills and general information so that they may stay up with advances and the necessities of life. Since the 1950s, social education, which is akin to public education and non-formal education today, has grown in popularity in Indonesia, particularly among colleges that have been affected by the "Shakai Kyouikiu" growth of social education in Japan. Community Education and Social Education in practice in Indonesia are influenced by the notion of community development with the main programs in the scope of public education, social education, or community development [1].

In 1982, Community Education and Social Education in Indonesia has renamed Education Outside School to encompass non-formal and informal education. Out-of-School Education has a similar concept to Community Education and Non-Formal Education, which emerged later. Any structured educational activity that takes place outside of the school system is what it is all about. Basic education, adult education, extended education, and continuing education, on the other hand, have the same purposes as adults: to provide basic information and life skills, as well as continued personal development in both classroom and out-of-school contexts. Non-formal education can be seen from the purpose of education. Regarding the formal education

system, Sulfemi [2] states that non-formal education is implemented to provide values, knowledge, and skills at an affordable cost and provide an inexpensive alternative to providing the skills needed by the economic system. This educational goal is to be achieved because formal education is seen as failing to fulfill the intended purpose. Arafat [3] emphasizes that non-formal education provides an opportunity to learn productive skills and a way to participate effectively in community development.

In line with the above thought, Hiryanto [4] in the context of understanding adult education explains that the goals of non-formal education are directed at: (1) increasing individual cognitive abilities through providing meaningful knowledge; (2) self-quality development towards a happy and self-actualizing personal achievement (self-fulfillment); (3) enabling individual growth and maintaining a good democratic society; free individuals may be seen as supporters of a healthy democracy; (4) changing and/or maintaining the social order in which education becomes a means for carrying out social transformation; and (5) education is intended to achieve organizational effectiveness where education is seen as an effort to develop the attitudes and skills needed to help organizations become more effective in achieving their goals.

Non-formal education develops various qualities of life-related attitudes and skills to be able to develop and build self-competence and social competence in community life. This is what then builds a much better standard of welfare and quality of life for the whole community. Indonesia, which has differences in terms of social life and various other contexts of life, needs to develop a pattern of social development that is much better and stronger in empowering the community.

Because in principle, the quality of people's lives, in general, can be seen from how the community can sustainably develop itself so that it can manage the potential of existing life much more perfectly. The role of out-of-school education in the community empowerment process cannot be underestimated. Because, awareness and formation of a human character who can manage their lives is not a simple process, but requires continuity and consistency in the process itself. This is the role of education outside of school in today's modern life, completely and truly.

### **The Role of Educational Technology in Learning**

Learning is an activity or an activity that makes someone learn. This is by what was stated by Degeng that learning is an effort to teach students. That's why good learning, of course, must be based on various considerations so that later learning activities can run smoothly and optimally. Given the many learning problems, of course, it is necessary to find ways or solutions to overcome these learning problems, with the hope that the learning problems found can be overcome and a solution can be found.

So that learning will take place well and as expected. Among the many factors that can overcome these learning problems is educational technology.

Educational technology will be able to assist in the resolution of learning issues. In this aspect, educational technology aids in the improvement of learning quality. Educational technology serves a variety of purposes in the classroom.

Yusufhadi Miarso has stated the following: (1) increasing educational productivity by: (a) speeding up the stages of learning, (b) assisting teachers in making better use of their time, and (c) reducing the burden on teachers in presenting information, allowing teachers to focus more on fostering and developing students' learning activities; (2) allowing for more individualized education by: (a) reducing rigid and traditional teacher control, (b) providing opportunities for students to develop according to their individual abilities; (3) providing a more scientific basis for learning by: (a) planning learning programs in a systematic manner, (b) developing research-based teaching materials; (4) improve learning ability by expanding the range of presentation,

and except that the presentation of messages can be more concrete; (5) allows for more intimate learning, because it can: a) reduce the difference between lessons inside and outside school, (b) provide first-hand experience; and (6) enabling equal distribution of quality education, especially by: (a) being used together with personnel or rare events, (b) bringing education to those who need it.

Educational technology plays a role in improving the quality of learning. The five areas of educational technology put forward, it will be more clearly understood that educational technology starts to play a role from the beginning, namely when designing or designing learning. This can be explained that how a teacher before carrying out learning designs learning as well as possible, because a good design will, of course, affect the quality of learning later. In the design, it began to be studied how to design a learning system, design messages, learning strategies, and characteristics of students. If all this is understood by the teacher, it is hoped that the learning carried out will be of high quality.

### **Community Education**

Community education has a function in school education activities, about the world of work and life. About school education, the function of community education is as a substitute, complement, and supplement. About the world of work, public education has a function as an activity that bridges a person into the world of work. Meanwhile, about life, community education serves as a vehicle for the survival and development of one's life.

The characteristics of community education are: (1) different forms of out-of-school education are characterized to achieve various goals; (2) limitation is a competition between several public educations which are seen as formal education from public education as a complement to other forms of formal education; (3) the responsibility for administering educational institutions outside of schools is divided by general/community supervision, personal supervision or a combination of both; (4) several out-of-school educational institutions are strictly disciplined with respect to teaching time, modern technology, equipment and reading books; (5) teaching methods also vary from face-to-face or teacher and study groups to the use of audio television, mobile practice units, demonstrations, correspondence courses, visual aids; (6) emphasis on the relative spread of theoretical and practical programs rather than public education; (7) unlike formal education, the level of the public education system is limited to which credentials are given; (8) teachers may be specially trained for certain tasks or have only professional qualifications which do not include the identity of the teacher; (9) recording of entry of students, teachers and leadership credentials, success of training, resulting in increased economic production, increased welfare and income of participants; (10) strengthening the form of public education has an impact on economic production and social change in a shorter time than in the case of formal school education; (11) most community education programs are implemented by youth and adults on a limited basis in life and work; (12) because it is used, public education makes national development complete. roles include knowledge, skills, and influence on program values; (13) held in a non-tiered, not sustainable, and implemented in a short time; and because of its nature so that the objectives, learning methods, and materials delivered are always different in each community education provider.

Public education is not a new thing in the repertoire of human culture and civilization. Community education has lived and been integrated into the life of every society long before the emergence and socialization of the school system. Public education has a different form and implementation from the existing system in school education. Community education arises from the concept of lifelong education where the need for education is not only in school education / formal education. implementation of community education is more emphasized on the provision of expertise and skills in a particular field.

The similarities between public education and school education can be seen from two points of view, namely the community's point of view and the individual's point of view. From the perspective of society, education means the inheritance or transfer of intellectual, artistic, political, economic, religious values, and so on; Meanwhile, from an individual point of view, education means the development of human potentials [5]. Another similarity is that the function of education is to develop science, technology, and skills that prepare a generation to have and play a certain role in society. The educational process always involves the community and all cultural devices by the values and philosophies it adheres to.

### **Learning Innovation in Community Education**

The demands of the competence of human resources in the 21st century. Non-formal education innovation is also driven by the development of opinions about the competence of 21<sup>st</sup>-century human resources in the last two decades which demands to be realized through various educational efforts, including non-formal education in the perspective of lifelong learning and sustainable development to produce a knowledge-based society.

In preparing oneself to have a competitive ability to enter the free market through lifelong learning strategies, formulate key competencies for human resources in terms of workforce demand which includes: literacy and numeracy skills, ability to master science, technology, and language, as well as skill competencies ( new general skills in the form of abilities: problem-solving, communication, teamwork, creativity, learning to learn; and have new functional and occupational skills as required [1].

Astuti [6] outlined the following 21st-century HR competencies: (1) the ability to think critically, laterally, and systematically, particularly in the context of problem-solving; (2) the ability to effectively communicate and collaborate with various parties; (3) the ability to develop their creativity to produce various innovative breakthroughs; (4) the ability to use ICT to improve performance and daily activities; (5) the ability to engage in contextual autonomous learning activities as part of personal development; (6) the ability to comprehend and use a variety of communication media to transmit varied ideas and engage in collaborative activities and interactions with a variety of people.

In addition, in the context of individual humans, they are expected to have 21st-century human character and behavior which include: (1) a responsible attitude toward all actions taken as an independent individual; (3) ethics, namely respecting and upholding the implementation of ethics in carrying out social life together; (4) human skills, namely having several basic skills needed to carry out functions as individuals and social beings; (6) have clear directions and principles in their efforts to achieve their individual goals; (7) a situation in which an individual has a clear reason and basis for every step and action taken; (8) has responsibility for the environment and the surrounding community; and (9) can improve humanity's quality of life through various activities and work carried out daily.

Individual abilities are also needed to deal with social problems faced in the twenty-first century, such as global awareness, namely the ability to see trends and signs of the times, particularly regarding globalization; financial, economic, business, and entrepreneurial literacy, namely expertise in managing various resources to increase business independence; citizenship literacy, namely the ability to carry out roles as citizens in vain; and financial, economic, business, and entrepreneurial literacy, namely expertise in managing various resources to increase business independence.

### **Learning Innovation**

In implementing learning innovations, it presents its challenges for education actors, such as educators, students, institutions, and even provides challenges for the wider community such as parents. In practice, educators must find ways to continue to deliver learning material and be

easily accepted by students. Likewise, students are required to be able to adapt to situations and conditions like today, one of which is mental readiness.

Learning innovation cannot be divorced from the role of technology in its implementation. All learning demands can be met with the help of technology. This is consistent with Lestari's opinion [8], according to which digital technology in educational institutions is a way of assisting learning, both in terms of accessing the information on learning resources and in terms of supporting learning activities and connected to assignments. With the advancement of technology, several platforms, such as e-learning, Google Classroom, Edmodo, Moodle, Learning homes, and even video conferencing platforms, such as Google Meet, Zoom, and Visco Webex, are now available to assist in the application of online learning.

Previously, studies on the importance of educational technology such as this have been conducted, one of which was conducted by Haniffah Salsabila [9], who stated that technology has a critical role in increasing educational quality. Furthermore, technology can improve the efficacy and efficiency of the teaching and learning process, making it easier to meet educational objectives. Furthermore, the subjects that deal with this technology are diverse, thus there are new findings that validate past research.

## **2 Research Methods**

This study uses descriptive qualitative research methods aimed at describing the role of educational technology in learning innovation in public education. Data collection in this study is using literature study techniques and previous research studies. This research employs a library method or strategy. The term "literature" or "literary study" refers to a set of tasks that include gathering library data, reading and taking notes, and analyzing research materials [10]. This research employs a literature review method. A literary study is a research project that uses library items such as documents, books, and magazines to gather information and data. Literature studies can also look at other reference books and similar earlier research findings to get a theoretical foundation for the subject at hand [11].

Books, journals, and websites about the chosen topic were employed as data sources for this study. In research, data is gathered by reading and/or exploring a variety of journals, books, and papers (both printed and electronic), as well as other data and information sources deemed relevant to the research or study. The content analysis method was employed to analyze the data in this study. This analysis is used to make reasonable inferences and can be re-examined in light of new information [12].

## **3 Results and Discussion**

The importance of public education, which is the spearhead for the development of science and the formation of community culture, still has various problems in Indonesia. One of them is in public education which is one part of the world of education in Indonesia. Community education itself provides space for the community to learn outside of school time or the school environment. Usually, community education is provided in the form of extracurriculars, training institutions, or community learning activity centers. Public education has many important functions, in addition to being a supporter of formal education, public education also functions as a substitute program for school education. This program is usually given to people who do not have the opportunity to attend formal school education.

Through public education, its application in educational technology has two consequences that must be faced, namely: (1) personally must be able to adapt to these changes to exist and

make a positive contribution to various changes, especially in the field of educational technology and the educational needs of the community. (2) as professionals, they must continue to develop their professionalism to create various effective learning and learning innovations as solutions to learning problems that will be faced by students in community education with various programs and types of community education being developed. To face these challenges, several competencies must be continuously mastered and developed.

Educational Technology is the study and ethical practice of facilitating learning and improving performance through the creation, use, and management of technological processes and resources. This definition underwent renewal or consolidation in 2008. The following describes the concept of the terms used in the definition of AECT Educational Technology 2008 [13], namely:  
Study.

As a collection of information and analysis through traditional conceptions of research.

- a. The study is also interpreted as a theoretical understanding of the practice of educational technology needed for the development and improvement of science through research and reflection.
- b. Ethical Practice. Refers to practical ethical standards that must be carried out by Education Technology practitioners. Practice ethics is something important to achieve success because without it success is impossible to achieve.
- c. Facilitating. Designing learning environments, organizing learning resources, and providing media tools for learning. Learning activities can take place face to face or take place in a virtual environment or what is known as distance learning.
- d. Learning. About memory, it is also concerned with understanding. Where the purpose of learning/education is understanding as knowledge retention.
- e. Improving. Regarding product quality improvements that lead to more effective learning, changes in capabilities have an impact on real-world applications. Improving abilities requires meeting the demands of effectiveness such as product quality as a result of the learning process, effective learning products, and learner abilities that can be applied in the real world.
- f. Performance. Regarding the ability of students to use and apply the newly acquired abilities, they can then organize and achieve learning objectives effectively.
- g. Making, Using, and Managing In a variety of formal and informal settings, creating refers to research, theory, and practice in the creation of learning materials, learning environments, and learning systems. The term "using" refers to the philosophy and practice of connecting students to learning environments and resources. Individual management and information management, which refers to the problem of organizing people and planning, regulating, storing, and processing information, are both covered under managing.
- h. Appropriate. Used to describe the word technology that is appropriate to the process and resources, which signifies the suitability and suitability of the educational goals to be achieved.
- i. Technological. Contain the meaning of systematic application of organized knowledge or knowledge for practical tasks. The technology in question can be in the form of software or hardware needed in the learning process.
- j. Processes. A series of activities directed at a specific outcome. Educational technology often identifies the process as the activity of designing, developing, and producing learning resources, which are classified as processes in the broad sense of educational technology.

- k. Resources. Resources have been expanded with technological innovation and with the development of new understandings of how technological tools can help learners learn. Learning resources can be in the form of people, media/tools, technology, and materials designed to help students. (AECT, 2004).

Associated with various changes and developments in various disciplines of science and technology, Robert Reiser in Mursid [14] professor in the field of instructional systems and learning technologies, shows that 10 trends will affect the field of educational technology and at the same time become a challenge for educational technologists in their application to public education, namely:

- a. Demands for continuous performance improvement in the world of work. One very reasonable thing, that every agency demands continuous performance improvement in its work environment. There are many ways to improve the competence of the workforce, including using non-instructional methods to complement the instructional method, namely by utilizing: motivational techniques, feedback systems, personal selection, workplace and job redesign, training and mentoring, performance support, knowledge management, and Informal learning.
- b. The development of constructivist psychology in the world of education. Learning designers, namely how they can select effective learning strategies; have adequate prerequisite skills to be able to carry out the learning and learning process that will be implemented; provide adequate scaffolding to provide tutoring, and must also be able to consider the efficiency of learning.
- c. The concept of knowledge management can be defined as the process of collecting, storing, and sharing valuable information, expertise, and insights, both within and across communities of people and organizations who share the same interests and needs. Rosenberg, in Reiser & Dempsey in Budiharto [15].
- d. Developments in the ICT sector have also provided facilities and various conveniences for workers in accessing information. The development of a system that provides workers with various access to information and tools that support performance when needed. Nguyen, in Reiser & Dempsey, in Surani [16]. This condition also illustrates that they have broad learning opportunities to increase their capacity and capability in doing their jobs. This development is at the same time a challenge for educational technologists, how to take advantage of these various supporting facilities to be able to facilitate workers still being able to learn efficiently and effectively in public education.
- e. Learning that utilizes the advantages of internet-based learning models, or better known as online learning. The development of internet-based learning models. ASTD State of the Industry [17]. Technology-Based, such as online, CBI, video, etc. The above conditions are certainly a challenge as well as a separate opportunity for educational technologists, because the more institutions that organize online learning, the more opportunities for learning designers to take part in the development and implementation of internet-based learning.
- f. This informal learning process allows the learning process to be unlimited in time and place. The development of the concept of "informal learning". Challenges for learning designers, especially in: (1) Identifying the latest informal learning activities in the environment where they carry out their activities, (2) Identifying informal learning activities that are expected to exist in the environment (organization), (3) Arranging the

environmental conditions in which they work. work that will maintain the expected informal learning activities.

- g. The development of web-based tools is utilized to facilitate individuals in creating content, sharing knowledge, and collaborating with other parties through the web. The development of various types of social media. Social media that can be used to facilitate student learning include Wikis, Blogs, Podcasts, social networking sites (such as Facebook), and media sharing sites (such as YouTube). Among the challenges that must be answered by learning designers are: (1) How to choose effective social media tools to help facilitate the learning process from various types of learning tasks; (2) How to plan a structure/scaffold that is sufficient to support students in achieving learning objectives; and (3) How to identify suitable roles for instructors when social media is used, especially in: presenting content and providing feedback.
- h. Development and utilization of various kinds of ICT-based games for learning innovation. Develop a variety of learning games. The development of variety and format of educational game software (Educational Games). The challenge that arises is how to develop learning games that can facilitate students' learning effectively. For this reason, Reiser, by adapting from Shute AERA's opinion), stated that a good game is designed to provide: (1) adaptive problem-solving challenges; (2) clear goals and roles; (3) High level of student control; (4) Motivating sensory stimulation; (5) Unreasonable feelings; (6) Providing continuous feedback; (7) Taking into account the criteria of a good game.
- i. Design and implement effective science learning innovations. learning science has become a trend that has received serious attention from various groups, including the field of learning technology, namely: (1) focusing on mastering in-depth understanding of concepts; (2) creating a student-centered learning environment; (3) using technology to create learning environments, provide students with new tools, and improve their understanding; (4) design for transfer of learning; (5) conduct study studies in real-world settings, not in the lab; (6) evaluate learning outcomes from various perspectives; and (7) research the design process.
- j. Information and communication technology devices that are increasingly sophisticated, such as smartphones, tablet computers, iPods, etc., can now be used to support the learning process in community education which is carried out on a "moving" or mobile basis. The development of concepts and technology allows learning innovation to be carried out on a mobile basis. This learning model has been developed a lot. This is because this learning model has many advantages including relatively cheap technology costs, reducing the digital divide, easy use of physical classes, portable facilities "learning anywhere and anytime", the closeness between students and teachers.

#### **4 Conclusion**

In essence, although the school system is still considered important, the rationale for thinking has begun to be realistic, namely not solely relying on the school system to serve various educational needs that are increasingly booming and diverse. Guidance and development of community education are seen as relevant to be able to complement or support each other with the school system so that every human being can adjust his life by the times. Community education has a different form and implementation from the school education system. Community education arises from the concept of lifelong education where the need for



education is not only in school education / formal education. The implementation of community education is more emphasized on providing expertise and skills in a particular field. Guidance and development of community education are seen as relevant to be able to complement or support each other with the school system. So that every graduate can live with the times and is always needed by the community along with the development of increasingly advanced science and technology.

The rapid development of science and technology has had a major impact on human life. Life becomes easier and cheaper. However, the digitization of the program also has a negative impact. The role of humans is gradually being taken over by automatic machines. This of course will add to the burden of local and national problems. Challenges will inevitably be faced in every innovation and technology transition. We must be brave and ready otherwise we will be drowned by this era of disruption. The target of the greatest performance improvement in education is the teacher because students only follow the applied education system.

Educational Technology will continue to follow and adopt various changes and developments in science and technology, including the field of information and communication technology. This condition at the same time requires educational technologists to continue to study these changes and apply them to facilitate students in solving learning problems and improving their performance through learning innovations in community education, there are programs and types of services for lifelong learning.

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