ATHENA: Journal of Social, Culture and Society
Vol 1, Issue 4, October 2023, Page 253-256
ISSN: 2985 - 3605 (Media Online)
DOI: https://doi.org/10.58905/athena.v1i4.201

Applications of Educational Technology in Solving Learning Problems

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Abstract. Educational technology in its contribution to the management and learning of education is openingup knowledge horizons about changing strategic environments. We need the growth of science and technology caused by learning and learning activities of innovation. Speaking in this case is inadequate because the concept of technological studies provides a formula for how to bring teaching and learning activities. Then, the application of educational technology, especially ICT (Information and Communication Technology) in education to overcome learning problems has a number of requirements. For example, the need for large investment costs and energy that are skilled in managing and developing education and utilizing technological advancements that will support the process of learning. It is noteworthy that education is a long-term investment. Therefore, investment in basic education facilities must be calculated with future educational outcomes.

Keywords: Educational Technology, Modern Learning, Problem Solving Learning

1 Introduction

Changes in the environment outside the world of education, starting from the social, economic, technological, to political environment, require the world of education to rethink how these changes affect it as a social institution and how it must interact with these changes. One of the environmental changes that greatly affect the world of education is the presence of technology. Technology is an important element in the life of the nation and state. The role of technology in human activities at this time is indeed so great. Technology has become the main facility for the activities of various sectors of life which contributes greatly to fundamental changes in the structure of operations and organizational management, education, transportation, health and research. Therefore it is very important to increase the ability of human resources to balance the role of technology. Human Resources (HR) Technology ranging from skills and knowledge, planning, operation, maintenance and supervision, as well as increasing the technological capabilities of leaders in government institutions, education, companies, SMEs (small and medium enterprises) and NGOs. So that in the end it will produce output that is very useful both for humans as individuals themselves and for all sectors of life. Technological developments are expected to have a major influence on the world of education, especially in the learning process.

Technology as an educational medium can be carried out using technological media such as computers, the internet, e-mail, and so on. Interaction between a teacher and students is not only done through face-to-face relationships, but must be done using these media to support the learning process. However, in reality, education in Indonesia, especially in Cianjur Regency, has not been able to balance the current rapid development of technology. This is caused by several factors, one of which is the uneven distribution of technology tools/tools as a teacher/HR facility in improving technological abilities, so that later it leads to the learning process that is expected and in accordance with educational goals. Seeing the facts on the ground that occur as described above, the authors are interested in compiling a paper on the use of educational technology in helping solve learning and learning problems.

Learning is a process of changing behavior in accordance with norms and ethics and is relatively permanent and acquired consciously or behavioristik [1]. Nana Sudjana, Learning is a process characterized by changes in a person, changes as a result of the learning process can be shown in various forms such as changes in knowledge, understanding, attitudes and behavior, skills, abilities and abilities, reaction power, receptive power and other aspects that exist in individuals[2][3]. educational resources.

In order for learning technology to play a good role in the world of education and learning, it is necessary to

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develop an appropriate and optimal utilization strategy to solve learning strategic problems which among others revolve around the quality, relevance, efficiency, effectiveness and competitiveness of human resources[4][5].

2 Methodology

The research method is defined as a scientific way to obtain data with the aim of certain usability data [6]. In this study, the method used is a qualitative method, namely in the form of observations in the form of surveys, on the application of educational technology as one of the problem solving in learning. Surveys are basically no different from research. The use of these two terms is often only meant to emphasize scope. Research focuses on one or several aspects of the object. While the survey is comprehensive which will then be continued specifically on certain aspects if a more in-depth study is needed[7].

Put forward several studies included in the survey method namely :

a. Institutional survey (institutional survei)
b. Job analysis (job analysis)
c. Document analysis (documentary analysis)
d. Content analysis (content analysis)
e. Public opinion survey (public oppinion survey)
f. Community survey (community survey)

Kerlinger suggests that the survey method is research that is done in large or small populations, but the data studied is data from a large sample taken from the population, in order to find the relative events distribution, and the relationship between variables. Sociology, and psychology[8].

3 Results and Discussion

3.1 Educational Technology in learning

Today's developments show more widespread use of the term "learning technology" by professionals engaged in this field. According to [9]this is based on the following reasons: (1) learning technology can more accurately describe the function of technology in education; (2) learning technology shows more emphasis on learning and teaching problems. The concept of the latest learning technology can be seen in the definition issued by the Association for Educational Communications and Technology (AECT), namely instructional technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning. 3

In this regard, educational technology can also be seen as a product and process. As an educational technology product it is easy to understand because it is more concrete in nature such as radio, television, projectors, computers and so on. 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. In line with this, the birth of educational technology was born from problems in education[10][11].

If analyzed in depth, the components of the definition of learning technology according consist of: (1) theory and practice; (2) design, development, utilization, management and evaluation; (3) processes and sources; and (4) study[12][13][14]. The main mission of learning technology is to help, trigger and stimulate the learning process, as well as provide convenience or learning facilities. The achievement of learning objectives in the form of changes in knowledge, skills and attitudes in a relatively fixed manner caused by experience, not because of maturity which is the main criterion for successful learning. This is in line with understanding; "*Learning is a change in human disposition or capability which persists over a period of time, and which is not ascribable to processes of growth*".

3.2 Educational Technology as a Problem Solver in Learning

Educational technology conceptually can play a role in teaching humans by developing or using various learning resources which include human resources, natural and environmental resources, opportunities or opportunities, and by increasing the effectiveness and efficiency of educational resources. Educational issues that are currently sticking out include equal distribution of opportunities to obtain education, quality improvement, relevance, and efficiency of education. A serious problem that is still felt by education, starting from basic education to higher education, is a quality problem, of course this can be solved through[15].

educational technology approach. There are three basic principles in educational technology as a reference in its development and use, namely: a systems approach, student orientation, and utilization of learning resources. The principle of the systems approach means that the implementation of education and learning needs to be

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designed or designed using a systems approach. In designing learning is necessary[16].

procedural steps include: problem identification, situation analysis, identification of goals, management of learning, determination of methods, determination of learning evaluation media. The principle of student-oriented means that in learning should focus attention on students by paying attention to the characteristics, interests, and potential of students. The principle of using learning resources means that learning should be able to utilize learning resources to access the knowledge and skills it needs. One more thing is that educational technology is a field that emphasizes the learning aspects of students. The success of learning carried out in an educational activity is how students can learn, by identifying, developing, organizing, and using all kinds of learning resources. Thus the effort to solve problems in the educational technology approach is to utilize learning resources. This is marked by changing the term from educational technology to learning technology[17].

Thus, educational technology plays a role in solving learning problems in a way:

a. Integrating various approaches from the fields of economics, management, psychology and engineering
b. By paying attention to and studying all conditions and the interrelationships between all of them.
c. Using technology as a process and product to help solve learning problems.

And in this case, solving learning problems can be done in several ways, including: :

a. Application of learning development procedures in the preparation of the Education Unit Level Curriculum (KTSP), curriculum structure and content, educational calendars, syllabus and other learning tools, such as Lesson Implementation Plans (RPP)
b. Application of learning development procedures in the preparation of learning materials, modules, textbooks or electronic books (e-books)
c. The application of learning methods that put more emphasis on the application of the latest learning theories, such as constructivism learning theory and other new educational paradigms
d. Develop and utilize various types of media according to needs and comply with the principles of effective and efficient use
e. Develop learning strategies to build and find identity through an active, creative, effective and fun learning process.

3.3 The Role of Technology in Educational Modernization

There are three important things that must be rethought related to education modernization: a. How do we learn, b. What did we learn, and c. When and where do we study By looking at the answers to these three questions, and the potential of technology that can be utilized as previously described, the role of technology in modernization of the nation's education can be formulated. The first question, how do we learn, is related to the learning method or model. The way of interaction between teachers and students determines the learning model. Currently there is a change in the learning paradigm related to dependence on the teacher and the role of the teacher in the learning process. The learning process should not be 100% depend on a teacher again, but more student-centered. A teacher is also no longer used as the only reference for all knowledge but rather as a facilitator or consultant.

The role that technology can play in this learning model is very clear. The presence of e-learning with all its various levels has facilitated this change. In general, e-learning can be defined as learning delivered through all electronic media including, the Internet, satellite, audio/video tape, interactive television, and CD ROM. E-learning has encouraged the democratization of teaching and learning processes by giving students greater control over learning. In general, the role of e-learning in the learning process can be grouped into two: complementary and substitution. The first presupposes that the way of learning with face-to-face meetings is still running but is added to a technology-assisted interaction model, while the second is that most of the learning process is carried out with the help of technology. Currently, regulations issued by the government have also facilitated the use of e-learning as a substitute for conventional learning processes.

4 Conclusion

Improving the quality of learning can be done by using educational technology media, namely by finding and identifying problems encountered in learning and then finding solutions through appropriate technology applications. Efforts to solve educational problems, especially problems related to the quality of learning, can be reached by using various learning resources and using learning media that function as a tool to increase the level of student learning outcomes. Technology is used as a medium to facilitate the search for that information.

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