

Learning technology design to improve effectiveness and learning outcomes

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Abstract

This study aims to find out how to use learning technology and learning outcomes and whether there is the use of technology as a learning medium to achieve effective learning outcomes. The type of research used is descriptive qualitative research. In this study, the focus of the research was the use of learning technology and learning outcomes in the Economic Education Study Program. The results of the study show that in the Economics Education Study Program, the use of learning technology has had a positive influence on lecturers in designing, implementing, and evaluating learning, but this has not fully had a positive effect on student learning gains. especially in the affective and psychomotor domains, while the influence of the use of learning technology has a positive impact on the cognitive domain of students.

Keywords: learning technology, effectiveness, learning outcomes.

Introduction

The development of information and communication technology has had an impact on the world of education, especially in the learning process. Knowledge develops rapidly. Along with the development of information and communication technology, if lecturers do not quickly adjust to the pace of scientific development, it is certain that the knowledge they have acquired and mastered during two-three years of study will become obsolete (Kolopita et al., 2022; Lee & Diana L. Owens, 2004; Makransky et al., 2019). For this reason, lecturers have no other choice but to continuously correct and update their skills in every space and time, because if lecturers don't do this, students can have more knowledge and skills than their lecturers because of access to information and communication technology. (Hafizah, 2020; Hamed & Aljanazrah, 2020; Parlindungan, 2020). As a result, the teaching and learning process which is expected to run effectively cannot be implemented simply because the lecturer is unable to make himself a source of knowledge (Mitchell et al., 2007; Moore et al., 2000; Tan et al., 2015).

Efforts to improve the quality of learning processes and outcomes are always sought, researched, and pursued through studies of various components of education, improvement, and refinement of the learning process (Chen et al., 2005; Forthmann et al., 2017; Hirvonen et al., 2019; Wong, 2018). Teaching materials, assessment systems, education management, lecturer upgrading, teaching and learning processes, and others have been carried out a lot. All of this is clear evidence of the government's efforts to advance education, especially in improving the quality of learning outcomes so that learning objectives can be achieved effectively. In improving the process and learning outcomes of students as an indicator of the quality of education, improvement and refinement

of the teaching system is the most direct and realistic effort, these efforts are directed at the quality of teaching as a process that is expected to produce quality student learning outcomes (Navickienė, 2020; Sali, 2020; Storebø et al., 2012).

Even though learning technology is good and sophisticated, without the willingness and ability of lecturers to carry out their duties they will not get the expected results (Daniels et al., 2008; Lewin, 1947; Sharov et al., 2019; Xiong et al., 2020). Lecturers are the key to the success of school education, especially in improving the quality of processes and effective learning outcomes. Therefore a lecturer must really take advantage of all learning resources, especially in the use of information and communication technology in order to be able to achieve effective learning outcomes. To find out whether the implementation of the program can achieve its objectives effectively and efficiently, it is necessary to evaluate. So with self-awareness from lecturers in utilizing all learning resources, especially information and communication technology, they will be able to achieve effective learning outcomes. However, based on observations made by researchers at the Economics Education Study Program at PGRI Adi Buana University, Surabaya. In this study program there are several learning technologies that can be used as an evaluation of learning outcomes, media and learning resources in the learning process, but after observation it turns out that the learning outcomes obtained by students are still less effective in terms of affective, cognitive and psychomotor. This is possible due to the lack of awareness of lecturers in utilizing learning technology in designing, implementing and evaluating learning.

Based on the situation analysis above, it is necessary to conduct in-depth research on the use of adaptive technology with students in order to increase the level of activeness and learning outcomes. The benefits of research The uses of this research are 1. Scientific uses This research is expected to become a body of knowledge in the development of educational science, especially in developing the use of learning technology in achieving effective learning outcomes. 2. Practical use of research results can be used as information material for lecturers, students, and the public who have an interest in the world of education for the advancement of education in the future.

Research methods

This type of research is field research using a qualitative approach by viewing the object of study as a system, meaning that the object of study is seen as elements that are interrelated and describe existing phenomena. The research location is the research object where the research activities are carried out. Determining the location is intended to simplify and clarify the object that is the target of research so that the problem is not too broad. The location of this research is the Economic Education Study Program, South Bontonompo District, Gowa Regency. The focus of research is on the learning process in the Economics Education Study Program at PGRI Adi Buana University, Surabaya. The use of technology in learning and learning outcomes. Research instruments used by researchers to obtain data in the field are observation, interviews, and documentation.

Qualitative data analysis if the empirical data used is qualitative data in the form of words not a series of numbers and cannot be arranged into categories or classification structures. Data can be collected in various ways, namely observation, interviews, and documentation, and processed first in typing.

Results

Learning process.

The success of learning is strongly influenced by several factors including the learning process. The learning process is a series of activities and interactions between lecturers and students. The implementation of the learning process needs to be carried out systematically based on the procedures that have been developed. In the learning process, the roles are students and educators because learning will not occur without students and educators. In the learning process, there are things that need to be considered so that the process runs smoothly, namely: the teaching system approach,

procedures, methods, techniques, syllabus, lesson plans, teaching materials, learning resources, and assessment of learning outcomes. . Therefore the researchers conducted interviews about the teaching system approach, procedures, methods, techniques, syllabus, lesson plans, teaching materials, learning resources, and assessment of learning outcomes. The teaching system approach that we took was, at first we lecturers thought that students in our study program already had knowledge, therefore we lecturers took a simulation approach, namely the lecturers started asking students about the lessons to be taught.

Before starting learning, it is important for lecturers to approach students with the aim of knowing students' initial abilities regarding their knowledge of the subjects to be taught. Further explained about the procedures for learning in the economics education study program. The procedures that we often carry out in this study program in the learning process include: a) giving instructions to the class leader to prepare his members that class will start soon. b) students are required to read a prayer. c) Ask students about the lessons learned. d) enter the core of the lesson that will be taught today. e) conclude and evaluate the lesson taught today. f) closed the lesson by greeting.

The learning procedure is a system that really needs to be considered by a lecturer in carrying out the learning process so that the learning process runs regularly. Further explained about the study methods of the economics education study program. The method we use in this study program is a. lecture method, b. discussion, c. method of cooperation/group d. writing method, e. assignment method, f. question and answer method. In teaching activities, the method is needed by a lecturer to achieve goals in the learning process that has been set. Mastery of teaching methods is very important for lecturers because learning methods play an important role in achieving learning outcomes, therefore lecturers must be skilled in using the teaching methods they use, and must be in accordance with the conditions that occur in students. Further explained about learning techniques in the economics education study program.

The technique we use in this study program in the learning process is that we lecturers adapt the techniques we use to the methods we use, we first look at the conditions of the students so that the methods we use are effective and efficient. Techniques in the learning process are very important because the methods used by lecturers in the learning process require techniques that must be adapted to the conditions of students so that the methods used in the learning process run effectively. Furthermore, it is explained about the syllabus and learning implementation plans. . In the learning process, syllabus and lesson plans play an important role in achieving the learning objectives of this study program. The methods, techniques, and materials that we will use are all systematized in it.

Before entering a new school year, it is very important for lecturers to plan the implementation of the learning process that will be faced, where everything must be summarized in a plan, namely the syllabus and lesson plans where all these plans are used in the learning process. neatly arranged from the beginning of the semester to the end of the semester. The results of interviews with lecturers regarding teaching materials in the economics education study program are: We, the lecturers of this study program, present teaching materials according to what has been included in the lesson plan, but sometimes we convey material outside of what is included in the lesson plan. In the learning process a lecturer must prepare the subject matter to be taught then the past subject matter must be asked back to students to find out how far they understand the material that has been taught. Further explained about the learning resources in the economics education study program. The learning resources that we use in this study program are only sourced from textbooks in this study program, some of which have been converted into power points. The rapid development of technology in this era has had a major influence on the world of education, such as the use of the internet as a learning resource. In this day and age books are no longer the only source of learning, there are many other things that can be used as learning resources, including the internet because the internet can reach various things around the world.

As for the results of interviews with lecturers regarding the assessment of learning outcomes: Evi Aulia (lecturer of economics) the assessment of learning outcomes in this study program is not

only an assessment of the numbers from answering the questions we give, but an assessment of the questions covering personality, morals, intelligence and skills. One of the main goals in the learning process is the learning outcomes obtained by students from the learning process by understanding and mastering the subject matter that has been delivered by the lecturer, it can be said that the learning objectives have been achieved. To find out student learning outcomes from the learning process, it is important for lecturers to evaluate students in the form of oral tests or written test. From the results of interviews conducted with one of the lecturers at the school, it can be concluded that the teaching system approach, procedures, methods, techniques, syllabus and lesson plans, teaching materials, learning resources, and assessment of learning outcomes at the school. the learning process in the Economics Education Study Program has been running effectively and efficiently as expected.

Utilization of learning technology in economic education study programs

The use of learning technology in the learning process basically refers to the whole system both designing, implementing, and evaluating learning. The main mission of learning technology is to assist, trigger and stimulate the learning process and provide learning convenience and facilities. Thus, the awareness of educators in economics education study programs in using learning technology to design, implement and evaluate learning is needed to facilitate the learning process. To find out more, an interview was conducted with the lecturer. Since we used learning technology in designing lessons, thank God, we no longer encounter difficulties so that the teaching process runs smoothly. Designing learning using learning technology is something that is very important in the world of education because things like that can provide convenience for lecturers in the teaching process, so the skills of a lecturer are needed to design learning so that it is arranged systematically. Further explained about the implementation of learning in the economics education study program.

The use of learning technology in carrying out learning is very important for us because it relates to students and learning materials, each lecturer must be able to adapt the students' conditions to the methods that will be used in learning. The use of learning technology in the implementation of learning is very important in learning because it relates to students and learning materials, therefore before carrying out learning, lecturers must be good at seeing the situations and conditions of students and adjusting to the methods used. will be used by lecturers in teaching. It is further explained by evaluating learning in the economics education study program. The use of learning technology in this study program has made it easier for lecturers to evaluate students and provide an assessment of what has been studied previously. Because the instruments we need to evaluate are clearly regulated. Evaluation is a system that cannot be separated in the teaching and learning process and involves both lecturers and students. To find out the learning outcomes obtained by students, lecturers must evaluate what they have taught, the goal is to find out whether the learning objectives are being achieved effectively or not. By utilizing learning technology, the student evaluation process can run smoothly. From the results of interviews with the heads of economic education study programs, it can be concluded that the role of learning technology is very important in designing, implementing, and evaluating learning. This can be seen by providing convenience in managing and determining student learning conditions in order to create a comfortable atmosphere, while in evaluating students learning technology has been provided. Convenience for lecturers in assessing their students.

Student learning outcomes in utilizing learning technology in economic education study programs

Outcome is an acquisition resulting from the consequences of an activity or process that results in a change in functional input, while learning is carried out to seek changes in the behavior of individual students. Thus learning outcomes can be interpreted as the acquisition resulting from the consequences of a teaching and learning process. Assessment of learning outcomes aims to see the major progress of students in terms of mastery of subject matter that has been taught by lecturers. In the teaching and learning process, effective learning outcomes are highly desired by lecturers and

students, this indicates the achievement of a learning objective. Therefore a lecturer must provide an injection of motivation so that the enthusiasm and interest in student learning increases. Therefore, lecturers must be skilled in utilizing all learning technologies in the study program. For further information, researchers will conduct interviews about learning outcomes in the economics education study program. The results of the interviews we conducted at the school regarding the effectiveness of the results of the use of learning technology in this study program were not fully able to have a positive impact and a large influence on students so that they were not able to produce effective products. learning outcomes both in terms of morals, personality, and skills.

Educational goals are planned to be achieved in the teaching and learning process. Learning outcomes are the achievement of learning objectives. The role of lecturers in increasing student learning interest and motivation means developing their potential. Thus, lecturer strategies and skills are needed in managing the class, especially in the use of technology as a learning medium. It cannot be denied that in the teaching and learning process most students feel bored because the demands and motivation of students are decreasing, in conditions like this the role of the lecturer is very important to increase student interest and motivation in learning. . Thus, lecturer strategies and skills are needed, especially in utilizing technology as a learning medium in study programs, such as print media and visual media because. lecturer skills in using the media can trigger student interest and learning motivation. However, according to the results of interviews conducted by researchers with lecturers, it can be concluded that the use of learning technology in the Economics Education Study Program has not been successful because it has not had a very positive impact or influence on student learning outcomes. Therefore, in making lesson plans, a lecturer must be skilled at adapting the methods used in the learning process to the conditions of the students so that the methods presented do not conflict with the conditions of the students. Further explained the use of learning technology in the preparation of lesson plans.

By utilizing learning technology in compiling lesson plans, thank God, in this study program, almost all lecturers no longer find it difficult to compile lesson plans since utilizing existing learning technology. Learning planning is the initial stage that the lecturer goes through before starting the learning process so that everything that will be done in the learning process is clearly structured. The use of learning technology in preparing lesson plans is very important because using it will make it easier for lecturers to prepare lesson plans. From the results of interviews obtained by researchers from one of the lecturers in the study program, it can be concluded that most of the lecturers have utilized learning technology in preparing lesson plans. To achieve effective learning outcomes in the learning process, the interest and motivation of student learning must be high. But sometimes in the learning process undesirable conditions occur in the learning process, such as boredom and laziness that students have in following lessons. Under these conditions, lecturer skills are needed in overcoming student boredom in learning. Further explained the skills of lecturers in creating a comfortable learning atmosphere. Before starting the learning process, our lecturer first saw how the students were at that time, especially during the second and third lessons, the hot weather conditions in the classroom made students start to get restless and uncomfortable so that students' concentration in learning decreased. so we lecturers have to adapt the methods we use to the conditions of students.

The use of methods in teaching must use certain techniques that are in accordance with the conditions of students so that they concentrate more on learning so that the effectiveness of learning outcomes can be achieved. Thus the lecturer must be skilled in determining what method to use in the learning process, as well as what media is suitable for displaying subject matter. From the results of interviews conducted by researchers with lecturers, it can be concluded that before starting learning, lecturers first look at the conditions of their students, the aim is to adjust the methods and media that must be used with the conditions of students. In the learning process, learning outcomes are the main goal that must be achieved by lecturers and students, because learning outcomes are a measure of success in the learning process. Learning outcomes are not just numbers given by lecturers to students but learning outcomes are how lecturers evaluate knowledge, behavior, and skills in learning. Further

explained about the learning outcomes of students in the affective, cognitive, and psychomotor domains in the Economics Education Study Program. From an affective perspective, most students have not shown confidence in learning, sometimes many students are still hesitant to ask questions about subjects, and cooperation in group assignments has not been seen. Student belief in the learning process is one thing very important thing to have, this indicates that students are really serious in following the learning process. With confidence, students will easily acquire the knowledge taught by their lecturers. However, in Madrasah Aliyah most students lack confidence in learning, they are still unsure about the subjects taught by their lecturers so that the learning outcomes obtained are not effective.

Knowledge possessed by students about the material taught by lecturers is something that is mandatory, it indicates the achievement of learning objectives. The results of interviews conducted by researchers with one of the lecturers of the Economics Education Study Program regarding the knowledge possessed by students from the learning process are. From a cognitive perspective, thank God, many of our students in this study program have mastered the subjects in this study program, and that can be seen from the results of the tests we gave them. One measure of success in learning is how students are able to understand the subject matter presented by the lecturer and to achieve this requires student concentration in learning. Again, in conditions like this, lecturer skills are needed in managing the class so as to create an effective learning atmosphere.

Further explained about the psychomotor students of the economics education study program. From a psychomotor point of view, students are not yet skilled in utilizing learning resources in this study program, because during empty class hours students do not take advantage of such situations to take books from the library and read them. From the results of interviews with lecturers about student learning outcomes from the psychomotor domain, it can be concluded that students have not demonstrated skills in utilizing learning technology, so lecturers are required to increase awareness in utilizing all existing learning technologies. By summarizing the results of interviews conducted by researchers with school principals and several lecturers of the economics education study program, it can be concluded that the learning process by utilizing learning technology can be said to have been running effectively, this can be seen from the ease with which the lecturer approaches the teaching system, procedures, methods, techniques, syllabus and learning implementation plans, teaching materials, teaching methods and learning resources and assessment of learning outcomes, as well as providing convenience for lecturers in designing, implementing and evaluating learning. However, this has not been able to fully influence the learning outcomes obtained by students in terms of affective, cognitive, and psychomotor. Therefore, lecturers need to evaluate their performance in utilizing learning technology so that the use of learning technology can have a major effect on the results obtained by students.

Conclusion

Based on the results of the research and discussion described in the previous chapter, the following conclusions can be drawn: 1. The results of the study indicate that the teaching system approach, procedures, methods, techniques, syllabus, and lesson plans, teaching materials, learning resources and assessment of learning outcomes in the learning process in the economics education study program can be said to have been running effectively and efficiently as expected. 2. The results of the study show that the role of learning technology is very important in designing, implementing, and evaluating learning. This can be seen by providing convenience in organizing and determining student learning conditions so as to create a comfortable atmosphere, while in evaluating student learning technology has made it easier for lecturers to assess their students. 3. The results of the study show that learning outcomes from the use of learning technology as a whole have not had a positive impact on student achievement 64 so that the learning outcomes obtained by students have not been effective, especially in affective and psychomotor aspects. While the influence of the use of learning technology has a positive impact on the cognitive domain of students.

Suggestion

Based on these conclusions, the authors put forward the following suggestions: 1. With the learning process running effectively, it is hoped that it will be able to have a positive influence on student learning outcomes both from the affective, cognitive, and psychomotor domains. 2. By using learning technology in designing, implementing, and evaluating learning, it is expected to be able to have a positive influence on student learning outcomes both from the affective, cognitive, and psychomotor domains. 3. By utilizing learning technology, it is expected to be able to have a positive influence on student learning outcomes both from the affective, cognitive, and psychomotor domains. 4. Provide facilities and infrastructure that support the use of technology as a learning medium. 5. The results of this study are expected to be developed by further researchers.

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