



Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning

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ABSTRACT

Technology has developed significantly over time. The development of this technology cannot be stopped or hindered because it is a demand for the needs of human life which are increasing day by day. Technology drives change from various perspectives, including in the field of education. Education develops along with technological developments. With the help of innovative media and learning methods used, education can be supported by technology. With the help of educational technology can be completed anywhere and anytime. The purpose of this research is to investigate the use of e-learning technologies to promote independent and flexible learning. The method used in this study is a quantitative research method with a survey design. Data for this study were obtained by filling out a questionnaire via the Google Forms link. The results of this study are that the introduction of e-learning technology encourages independent and flexible learning, creates flexible choices available to students anywhere and anytime, which enriches learning materials and stimulates learning, opens up learning and increases efficiency. teaching and learning processes and encourage student independence. To take advantage of it, educational institutions, both schools and tertiary institutions, must apply it in a different way, complement or replace it. The limitation of this research is that researchers only conduct research at the school level. The researcher also hopes that future researchers can take this research to a higher level, and the researcher also hopes that in the future there will be other researchers who can advance this research.

Keywords: *E-Learning, Independent, Flexible Learning, Technology*

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INTRODUCTION

The world of education in today's era has developed significantly (Cornely et al., 2019). This can be evidenced by the emergence of various kinds of media and learning methods that are used (Muthuprasad et al., 2021). v (Guess et al., 2020). The development of various kinds of media and methods is growing along with the rapid development of technology. The current momentum of technology is catching up with

the extraordinary acceleration of (Chang et al., 2021). This technique was learned a few years ago and then started to be replaced by new technologies, also in a different way to traditional learning (Kye et al., 2021). With this significant technological development, it is hoped that the world of education will also be able to follow it. this is expressed so that the world of education is able to produce the best graduates every year and be able to update every change that occurs.

The development of technology that is increasingly developing makes humans basically dependent on technology (Zou et al., 2021). Technology supports almost every aspect of human work, including education. They use technology in their daily activities, from the young to the old, from experts to ordinary people (Sánchez-Cruzado et al., 2021). In addition to everyday life, technology also has its own place in the teaching and learning process of education (Garzón & Acevedo, 2019). Today's technology is leading to a variety of more creative online learning applications (Nousheen et al., 2020), not monotonous and fun for students (Martínez et al., 2020). Global demands demand that the world of education always evolve in accordance with current technological needs, especially to support the use of technology and further develop the quality of teaching (Buenaño-Fernández et al., 2019). The demands of these changes require education to be innovative and creative in delivering learning content.

The form of technology development that can be used in learning is E-Learning (Craik et al., 2019). E-Learning is an innovation that can be used in learning, not only in the delivery of learning materials, but also in the event of changes to different student competencies (Stetco et al., 2019). Through E-Learning, students not only listen to the teacher's presentation, but also actively observe and do something, and are able to show it (Parra-González et al., 2020). Teaching materials in E-Learning can be virtualized in various forms, making it more attractive and dynamic to encourage students to go further in the learning process (Papanastasiou et al., 2019). In this E-Learning learning, students are required to be more independent in understanding the material and working on assignments given by the teacher, so that students play a more active role in their learning.

The use of online learning (E-Learning) in the learning process is very important (Jin et al., 2019). Online learning is one of the most popular forms of online learning, which offers various advantages such as, more flexible learning opportunities without location and time limits, facilitating public access to education (Yang et al., 2020), enrich learning materials and stimulate learning, open up the learning process, improve learning efficiency, and help students learn independently (Amershi et al., 2019). The term e-learning itself cannot be separated from the application of ICT (information and communication technology) or information and communication technology (ICT), where online learning is one form of its application. However, the introduction of ICT in learning often only refers to the use of the Internet in the teaching and learning process.

Learning with the help of e-learning creates independent and flexible learning. (Ranal et al., 2023). Because as time goes by, many people are interested in flexible learning rather than the traditional style of learning that requires going to school or other

places (Al Maarif et al., 2023). This type of learning method allows students to have full control over the scope and duration of the learning material. This is in contrast to face-to-face or traditional learning, which may be a bit rigid for some and also requires students to be present at school (Maryati et al., 2022). Independent learning is not tied to a specific schedule or time. Instead, students can decide for themselves when and where they study. This learning approach does not require participants to be online with the instructor, as is the case with most online schools or other online courses (Mutlu-Bayraktar et al., 2019). Since all learning materials are available, students are free to use the materials and learn at their own pace (Abbasi et al., 2020). With unlimited access to the internet, students are increasingly using self-study methods. Apart from the desired flexibility, self-study is also proven to save time and money.

Despite all its conveniences, this self-study method certainly has its advantages and disadvantages (Lu & Chen, 2022). If you want to learn more, there are a few things you need to know about self-study so you can customize it to your learning style (Humphrey et al., 2019). The benefit that the person experiences in conducting this independent research is independence, i.e. independence in understanding the material and answering questions asked by the teacher (Afzal et al., 2019). When learning independently, students experience minimal pressure because they learn individually. In addition, students also have good control over their own learning time because independent learning is flexible (Cornely et al., 2019). Self-paced learning minimizes learning distractions, allowing students to focus on absorbing and understanding what they are learning (Hussain & Cambria, 2018). In addition, in this independent learning, students can review the material presented through social media content as a learning support tool (Kakhani et al., 2021). However, this self-learning also has some disadvantages, including the lack of face-to-face student interaction. This is concerning because it is feared that students become introverted and cannot develop their interests and talents.

Some previous researchers' views on the adoption of e-learning technology to encourage independent and flexible learning, namely: First (Chusna, 2019), He conducted a research titled E-LEARNING Learning and obtained results about online learning models that change the learning culture in the context of learning. Learning becomes very flexible because it can be adjusted to the time students have to learn the material provided by the teacher. The success of student learning is determined by the teacher, therefore teachers must have the ability to adapt to technological developments. Second (Hou et al., 2019), He conducted research on the utilization of e-learning as a learning environment and concluded that e-learning is an innovation used in the learning process not only in terms of learning materials but also in terms of changes in students' different abilities. With online learning, students not only listen to what the teacher discusses, but also actively observe, act, present. Learning materials can be virtualized in various formats so that they are more interesting and dynamic and can motivate students to learn. The utilization of ICT in higher education activities in Indonesia was encouraged by the Minister of National Education's decree (SK Mendiknas) in 2001

which encouraged conventional universities to adopt distance learning (dual format).

The purpose of this research is to examine the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning. This research also explains how the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning. With the help of E-Learning, it is expected to create independent learning and flexibility. Where independent and flexible learning is a form of independent learning that is done anywhere and anytime. E-Learning is also expected to help the implementation of independent and flexible learning. With the existence of E-Learning or online learning, which is carried out in their respective homes, of course it will gradually be able to realize the independence of students in learning. With the advantages of E-Learning in assisting independent and flexible learning as a form of implementation, the researcher is interested in raising the research title Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning.

RESEARCH METHODOLOGY

researchers in this study used quantitative methods (Yu et al., 2020). This quantitative research method will produce final results in the form of numerical data obtained by filling out questionnaires on Google Forms and distributed to students as research subjects (Zawacki-Richter et al., 2019). In addition, this quantitative method allows for systematic, planned, and structured research. This quantitative research method is widely used in research. This quantitative method is defined as a systematic process and realizes a phenomenon by collecting data and then measuring and verifying its accuracy by filling out questionnaires and interviewing stakeholders (Popov et al., 2019). This research is mostly done through statistical research where quantitative data is collected through research studies. This quantitative research method provides information that is truly accurate and realistic because the end result is in the form of numbers.

The type of research is a test whose purpose is to test the use of technology in distance and open learning (Daniloski et al., 2021). The researcher's data collection technique is to seek and collect current information about field facts. Observation point data collection is a quantitative analysis technique of research data (Nusinow et al., 2020). In data analysis, this is done by describing and describing the data collected without changing the source of the data obtained. The first step in this quantitative research is to find the root of the problem or formulate the problem, then conduct a literature review, formulate a hypothesis, determine the methodology to be used, determine the instrument or research tool, and conduct data analysis and finally make conclusions from the research made.

RESULT AND DISCUSSION

E-Learning or online learning is a form of learning technology that contains information and communication that facilitates students to learn anywhere and anytime. The system in e-learning application, the system in e-learning application is often

referred to as learning management system "LMS". which means a software system that virtualizes the general teaching and learning process for management, documentation, training program reports, online classrooms and events, e-learning programs and educational content, for example, all functions related to the management of learning lessons, class management, creating materials or content, discussion forums, assessment systems and online examination systems available via the internet. Online learning content is the content and teaching materials in the e-learning system (LMS). This content and teaching materials can be in the form of multimedia content or content in the form of interactive multimedia as learning multimedia that facilitates the use of mouse, keyboard, or text-based operations Content, which is content in the form of text, such as in wikipedia textbooks. Usually stored in the Learning Management System "LMS" so that students can complete it anytime anywhere and anytime.

The main actors in the implementation of e-learning can be said to be the same as traditional teaching and learning, namely teachers who guide students to receive teaching materials and managers who guide the administration and teaching and learning process. Online learning using e-learning can bring a new atmosphere to various learning development projects. The proper use of online learning can improve maximum learning outcomes. With e-learning, students can minimize expenses and can manage their learning time as well as possible. In addition, students can access learning materials from multimedia content anywhere and anytime. E-learning will create students who have high independence. E-learning also provides a new atmosphere for students, because the learning process does not only occur in the classroom.

This e-learning is more focused on independence and flexibility. The independence in question is that students can go deeper into the material, by the way students search for material and process material individually. This online learning or e-learning gives knowledge, not just receives knowledge. Independent learning does sound very safe and flexible. Flexibility means that students can adjust their learning needs, students can do learning wherever and whenever according to their needs. This can allow students to adjust learning activities with other activities such as family and work. Flexible learning means learning that is flexible and easy to implement. However, this learning certainly still has opportunities and challenges in its implementation. The opportunities resulting from this e-learning are that students will have an independent nature and students can adjust their learning time with activities outside of learning. And for the challenge of this e-learning is that students will not feel face-to-face interaction, whereas in education the meeting of teachers and students is needed to stimulate learning and students also get motivation from teachers to increase students' enthusiasm for learning.

Figure 1: Opportunities of E-Learning Technology Implementation in Encouraging Independent and Flexible Learning

ASPEK	
E-Learning Technology Implementation Opportunities in Promoting Independent and Flexible Learning	
Agree	Disagree
60	40

Based on Figure 1 above, it can be concluded that the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning offers great opportunities for students. Most respondents gave positive answers and reactions to the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning. This e-learning will encourage the development of students' learning quality both from the aspect of independence and from the aspect of implementation. The results of the survey conducted as part of the survey also show that the Implementation of E-Learning Technology in Promoting Independent and Flexible Learning is very influential. One of the main advantages of the e-learning intelligence model is that it offers various platforms that can be easily and quickly accessed and used as learning media to support the learning process for the realization of independent and flexible learning.

Figure 2: E-Learning Technology Implementation Challenge Score in Promoting Independent and Flexible Learning

ASPEK	
E-Learning Technology Implementation Opportunities in Promoting Independent and Flexible Learning	
Agree	Disagree
55	45

Based on the results of the research completed with a questionnaire containing statements from student respondents, it can be concluded that the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning faces several challenges. These challenges can be in the form of challenges in the implementation of independent learning or from the e-learning itself. Which e-learning requires internet access so that it can be limited by the network and requires the use of packages. The internal challenge of the students is also whether they are serious in carrying out the learning, since they are not under the direct protection of the teacher. However, the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning offers many advantages that can facilitate the process of independent and flexible learning, especially for people who have limited space and time to carry out face-to-face learning.

At this stage of the research, the researcher did not contact the school directly to conduct the research, but rather by sharing a survey link created with Google Forms. The questionnaire contains statements that are given five answers, namely strongly agree, agree, undecided, disagree and strongly disagree. then students choose one of the

multiple choices. The purpose of sharing the survey was to provide relevant and up-to-date information about the researcher's study on Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning. The knowledge test was conducted by filling out a questionnaire with google form. The survey contained 15 statements, including statements about the Implementation of E-Learning Technologies in Promoting Independent and Flexible Learning. The results of filling out the questionnaire against the statements that the researcher prepared provided the following information:

NO	Statement	SS	S	RR	TS	STS
1	I feel that Implementation of E-Learning Technology for Independent and Flexible Learning can help Independent and Flexible Learning	60%	40%			
2	I feel that the implementation of e-learning has a positive impact on Independent and Flexible Learning.	33,3%	50%	16,7%		
3	I feel that the implementation of e-learning can facilitate the learning process of Independent and Flexible Learning	70%	30%			
4	I feel that e-learning can support learning Independent and Flexible Learning	66.7%	33.3%			
5	In my opinion, technological developments must be followed by every educational institution	55%	45%			
6	I feel that the implementation of e-learning can make it easier to understand learning Independent and Flexible Learning	50%	50%			
7	In my opinion, e-learning is very suitable to be implemented in Independent and Flexible Learning.	70%	30%			
8	I think that with e-learning the Independent and Flexible Learning learning process will run more effectively.	50%	50%			
9	I think e-learning as a transformation in Independent and	50%	50%			

	Flexible Learning learning has an interest in each other.					
10	I feel that with e-learning Independent and Flexible Learning is easy to implement.	60,7%	39,3%			
11	I feel that with the implementation of e-learning the organizing process becomes easier.	60 %	40 %			
12	I feel that every learner should be able to master e-learning because e-learning has many benefits in its use.	50%	50%			
13	I feel that the Independent and Flexible Learning learning process will improve if e-learning is used.	66,7%	33,3%			
14	I feel that e-learning can change the way students learn.	50%	50%			
15	I think the use of e-learning in Independent and Flexible Learning does not consume a lot of time.	33,3%	50%	16,7%		

Figure 1: Table of questionnaire filling by students

Description:

SS = Strongly Agree

S = Agree

RR = Undecided

TS = Disagree

STS = Strongly Disagree

The table above is data obtained from filling out a questionnaire containing statements filled in by students. The statements consist of 15 statements related to the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning. The assessment stage consists of 5 categories namely strongly agree, disagree, doubt, disagree, and strongly disagree. The highest assessment result is 70% with a strongly agree category related to the statement "I feel that the implementation of e-learning can facilitate the learning process of Independent and Flexible Learning" and the statement "I think e-learning is very suitable to be implemented in Independent and Flexible Learning". The second highest assessment result is 66.7% with the same category which is strongly agreed related to the statement "I feel that e-learning can support Independent and Flexible Learning learning" and also the statement "I feel that the Independent and Flexible Learning learning process will improve if e-learning is used". From the results of filling out the questionnaire, it can be concluded that on average students give a positive response to the Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning.

CONCLUSION

Based on the research results that researchers obtained after conducting research entitled Implementation of E-Learning Technology in Encouraging Independent and Flexible Learning. It can be concluded that e-learning plays an important role in encouraging independent and flexible learning. E-learning is very helpful in the process of independent and flexible learning that is carried out online. This independent and flexible learning is very beneficial for students who have a schedule of activities other than school activities, because this independent and flexible learning system is independence in learning and flexibility in the time and place of learning that can be adjusted by students. This independent learning also reduces the demands for students, as well as reducing learning disruptions felt by students. However, the implementation of E-Learning Technology in Encouraging Independent and Flexible Learning certainly still has pros and cons in its implementation. However, it does not demand the shortcomings of this e-learning. On the other hand, a lot of information is obtained from learning by using this e-learning.

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