Analysis of User Experience in E-learning Implementation in Higher Education: A Case Study on Students UKI Toraja

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Abstract
This study aims to determine the application of e-learning in computer graphics courses. This research uses descriptive analysis methods with observation, interview and questionnaire techniques for students of the education technology study program at Universitas Kristen Indonesia Toraja class of 2021 who are randomly selected and descriptive techniques are used as analysis techniques. The results of the analysis show that students know e-learning, as many as 62% of students define e-learning as a learning that is done online (online) and the remaining 38% define e-learning as technology-based electronic learning. This study also concluded that 93.3% of students gave positive perceptions related to the activity of accessing materials.

Keywords: *User Experience, E-Learning, Higher Education*

Introduction

The revolution in technology and the development of information system services, particularly computers and the internet, have changed the practical and efficient perspectives of society. With the rapid advancement of the internet, it inevitably impacts everything, leading society towards a technology-based transitional gateway. In this context, the speed of information delivery and the ability to receive or manage information become crucial, especially in advancing the field of education. There has been a shift in the management of education, particularly at the school level, from centralized to decentralized, bringing consequences in education management (Sutrisno, 2007). This shift is seen as granting extensive autonomy to schools or educational providers, allowing them to innovate in curriculum development and instructional models. The internet holds significant potential in learning, serving as a learning resource, medium, and supporting the management of the teaching-learning process (Koesnandar, 2008). Effective learning activities require a supportive medium for absorbing various information, and with the development of technology, information technology plays a crucial role in obtaining information related to the taught subjects (AG Gani, 2018).

The internet technology emerges as a diverse medium, where internet communication can be interpersonal, such as email and chatting, or known as one-to-many communication, like mailing lists. The internet can also operate in real-time similar to conventional methods (Mawarni & Muhtadi, 2017). Based on this, the internet as a teaching medium possesses distinctive characteristics, serving as both interpersonal and mass media, interactive, and enabling synchronous as well as asynchronous communication. These characteristics allow learners to communicate with sources of knowledge more extensively compared to conventional media.

Utilizing communication and information technology in education, particularly in schools, is an effort to enhance the quality of education in Indonesia. This is achieved by utilizing teaching materials packaged in the form of information and communication technology-based media, such as e-learning. E-learning is a technology-based learning medium, and its utilization is still underdeveloped and underutilized in Indonesia. Efforts in the development and utilization of the internet are continually being made, including the implementation of e-learning. With e-learning, educators can create and implement interactive learning, which can be used in distance learning or blended learning.

Education is a conscious and planned effort to create a learning atmosphere and learning processes to actively develop the potential of learners to have spiritual strength, self-control, personality, intelligence, noble character, and the skills needed for themselves, society, the nation, and the state. Education is a sector greatly impacted by the development of science and technology. Various forms of technology applied in formal education activities have been developed. Formal education organized by the Indonesian government is divided into primary, secondary, and tertiary education levels. At the secondary education level, the types of education provided include junior high school (SMP), senior high school (SMA), and vocational high school (SMK). The classification of these education levels is based on the psychological and physical development theory of learner groups in Indonesia. Based on this theory, the development of learning technology also occurs (Herlandy & Novalia, 2019).

One form of technology application in education is the concept of e-learning. The concept of e-learning is a widely known term both domestically and internationally. E-learning is a learning concept that uses computer technology that can be distributed and accessed through computer devices. With the introduction of e-learning, various software for managing teaching materials for e-learning, especially multimedia types, has been developed. In learning, the use of multimedia can enhance the learning activities of learners in the audio, visual, and skills aspects. One advantage of multimedia is that it encourages learners to become active participants in the learning process. With multimedia e-learning, learners can access learning more quickly, flexibly, and without time constraints. Furthermore, it is stated that the use of e-learning in education is to improve the effectiveness and flexibility of learning and to facilitate educators in presenting abstract, micro, or macroscopic concepts that are difficult to demonstrate in reality. Through e-learning, all these concepts can be illustrated (Herlandy & Novalia, 2019).

E-learning is short for electronic learning, which means learning using electronics, including computers or the internet. Essentially, the concept of e-learning has a broad meaning and is perceived differently by different people. E-learning is defined as any teaching and learning that uses electronic networks (LAN, WAN, or the internet) to deliver learning content, remotely conducted using internet media. E-learning combines teaching methods and technology as a means of learning (Jo Hamilton Jones, 2003). E-learning is an instructional process that involves the use of electronic equipment to create, aid in development, deliver information, assess, and facilitate a learning-teaching process where the learner is at the center, and it is interactive, occurring anytime and anywhere.

The main focus of e-learning is on students or learners, where students are required to be independent in managing their learning time and taking responsibility for the implementation of their learning. This "forces" students to play a more active role in their learning. This is significantly different from conventional or traditional learning, where the teacher is considered the source of knowledge, someone who knows everything and is tasked with imparting knowledge to learners or students. Learning models that utilize

information technology, such as e-learning, can result in a cultural shift in the teaching and learning activities context. According to Rohmah (2016, p. 15) cited in Rijki Ramdani (2018, p. 3), four components that should be considered in building a learning culture using e-learning in schools are as follows: 1) Learners are required to be independent in learning with various appropriate approaches so that students can direct, motivate, and self-regulate in their learning. 2) Educators are capable of developing knowledge and skills, facilitating learning, understanding learning, and the things needed in learning. 3) Adequate infrastructure is available. 4) Creative administrators and infrastructure readiness to facilitate learning.

To achieve effective e-learning, it must provide a personal and beneficial experience similar to the level of enjoyment and learning management when used in traditional face-to-face classrooms. For the implementation of e-learning, teachers must have basic components, such as the ability to create lesson plans, mastery of technology and information (ICT) in teaching, utilizing the internet as a learning source, and mastery of teaching materials relevant to their expertise (Sutrisno, 2007). Characteristics of using e-learning include utilizing electronic technology services where users (teachers and students, students and students, teachers and teachers) can communicate easily without being restricted by regulations. It also leverages computer advantages such as digital media and computer networks. Learners can independently use learning materials by storing them on the computer, making them accessible to users (students and teachers) anytime and anywhere. Additionally, e-learning utilizes schedules, curricula, learning outcomes, and more.

Blended e-learning, essentially a supplementary source, supports traditional approaches while also facilitating a virtual learning environment through an institution. Technology's role in this type of learning is as a medium that helps instructors implement blended e-learning. The application of e-learning is web-based online learning as an information medium, conditioning students to form their own knowledge and apply concepts (Rizal & Walidain, 2019). The function of e-learning, specifically E-Learning in classroom instruction (Siahaan, 2002), includes: 1) As a supplement, giving students the freedom to choose whether to use electronic learning materials or not. It is optional for students, but those who use it gain additional knowledge or insights. 2) As a complement, programmed learning materials to complement what students receive in class. 3) As a substitution, providing flexibility for students to participate in learning activities, either fully face-to-face, partially face-to-face and partially through the internet, or entirely through the internet.

With the advancement of current technology, computers as internet access media are no longer a luxury but a basic necessity in daily life. The ability to use computers and related technology efficiently, with skills ranging from basic usage to programming and problem-solving, is crucial. Learning is seen as a systematic process involving planning, implementation, and systematic evaluation to achieve ideal learning results and goals. Given the close relationship between current technology and the lives of learners, there should be room for utilizing e-learning models through blended learning methods in classrooms. As time progresses, human needs continue to develop and increase. The discovery of new technologies is one of the factors supporting new needs in various fields, including education. This learning model is a cost-effective and effective way of learning. The application of blended e-learning is expected to contribute to the effectiveness of the learning conducted, allowing students to achieve optimal competence in the computer graphics course.

In the process of implementing the intended model and method, there are several problem formulations that serve as references in this research. These problem formulations include: (1) What are the stages of blended learning that can be applied in learning?; (2) How effective is blended learning in the computer graphics course?; What is the influence of blended learning on improving students' understanding of concepts in the computer graphics course?; Based on the explanations provided, the objectives of this research include: (1) Describing computer graphics learning activities using blended learning; (2) Describing the level of effectiveness of blended learning in the computer graphics course; (3) Analyzing the influence of blended learning on improving students' understanding of concepts in the computer graphics course. Through the implementation of this research, the benefits include contributing to the use of e-learning-based learning resources in computer graphics education and serving as literacy that educators can use to present different learning activities.

Research Methods

This research was conducted to obtain data on students' learning activities, motivation, and learning outcomes in computer graphics. The research method used in this study is a descriptive research method. To obtain student data, a questionnaire in the form of a survey was distributed to third-semester students of the Educational Technology program at the Toraja Christian University of Indonesia. The questionnaire consisted of open-ended questions and was distributed to students in the 2021 cohort in classes B1 and B2 via WhatsApp. The questionnaire was created with the help of Google Forms. The focus of this research is on students in the Educational Technology program at Toraja Christian University of Indonesia, specifically those in the 2021 cohort. Since the research subjects are students, the research was conducted at Campus 1 Makale, Toraja Christian University of Indonesia.

The data used in this research come from various sources:

1. Observation: The researcher conducted direct observation, examining and observing events firsthand, and recording incidents that occurred in the actual situation.
2. Interview: The researcher conducted interviews to gather information from the interviewees. The interviews in this study used an unstructured interview method because the researcher considered it the most adaptable. In this method, subjects were given the freedom to elaborate on answers and express their views freely.
3. Questionnaire: This method involves accumulating data obtained by communicating with data sources. According to Istijanto (2005), a questionnaire is a list of questions used by the researcher to obtain data directly from respondents through a dialogue by posing questions.

Results and Discussion

Data yang diperoleh dari hasil kuisioner yang diberikan kepada mahasiswa Teknologi Pendidikan Angkatan 2021 kelas B1 dan B2 dapat dilihat pada tabel dan diagram dibawah ini.

Table 1. answers to open-ended questions related to students' understanding of E-Learning

What do you think is E-Learning?
1. E-Learning technology-based learning that aims to simplify the learning process.

2. E-Learning is a form of information technology that uses computers.
3. E-learning is online learning that facilitates our learning process. For example, when we want to collect assignments, discussions or review lecture material because it can be accessed anytime and anywhere.
4. Electronic learning system as a form of learning information technology and can be accessed anywhere.
5. E-learning in my opinion is the process of teaching and learning online with the help of the internet.
6. E-learning is online learning using computers, tablets, cell phones through the internet network.
7. In my opinion, e-learning is an online teaching and learning process that is carried out with the help of the internet network.
8. I think e-learning is online learning.

Based on interview data to 30 random samples that have been obtained, students of educational technology study program have known the definition of e-learning. Based on students' opinions in Table 1, it can be said that as many as students or 62% define e-learning as a learning that is done online. This opinion is in accordance with the definition of e-learning according to Hamid who states that in e-learning between learning providers (teachers / educators) and (students) are separated by cyberspace (online) (Saifuddin, 2018). And the remaining 3 students or 38% define e-learning as technology-based electronic learning. This opinion is in accordance with the definition which states that e-learning can be interpreted as a teaching and learning process by utilizing technology using electronic devices such as computers (Simanihuruk, et al., 2019).

The types of e-learning applications and platforms are currently very diverse, the questionnaire distributed contains several questions categorized into four main points regarding e-learning, namely, providing material and assignments, collecting assignments, quiz; and virtual discussions. The e-learning that is often used by lecturers of the educational technology study program at Universitas Kristen Indonesia Toraja. E-learning in the form of assignments and material provision usually through WhatsApp, Edmodo, Google Drive & Google Classroom, virtual discussions face-to-face through Google meet and Quiz inte.

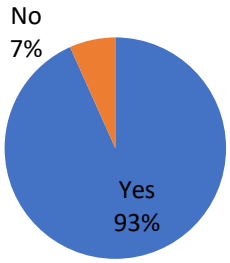

Figure 1. The category of e-learning application in computer graphics courses plays a very important role

Figure 1. Shows that educational technology students of the 2021 batch of Indonesian Christian University of Toraja identified 93.3% gave a positive perception regarding the application of e-learning in computer graphics courses with WhatsApp, Edmodo and Google classroom media. Furthermore, it also identifies that e-learning as a system of providing material and assignments online can be accepted and followed by students. As stated by experts that e-learning has now become a student need and the results of the study also confirm that students are quite aware that e-learning is important and very useful in lectures (Udil, 2020).

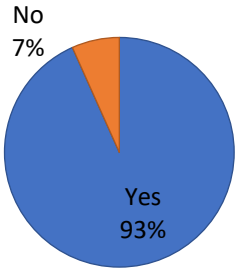

Figure 2. Category of e-learning helps students in learning

Figure 2 depicts the identification of 93.3% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia who have a positive perception regarding e-learning aiding them in their learning through platforms like WhatsApp, Edmodo, and Google Classroom. Furthermore, it identifies that e-learning as a learning system is well-received by students. In other words, students do not encounter significant difficulties in learning using e-learning.

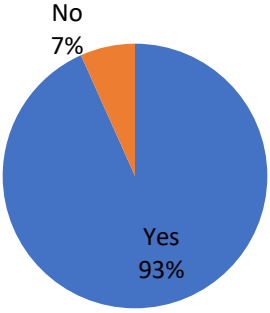

Figure 3. Analysis of information technology learning models such as e-learning

Figure 3 shows that 93.3% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia have a positive perception regarding information technology learning models such as e-learning. This data indicates that the majority of students are more interested in information technology learning using e-learning.

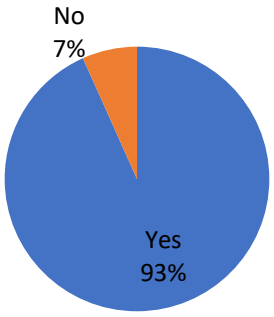

Figure 4. Category of benefits of e-learning for students in learning computer graphics

Figure 4 illustrates that 93.3% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia have a positive perception regarding the utilization of e-learning for students in learning.

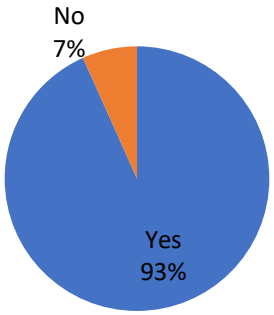

Figure 5. Category of e-learning applicable in schools

Figure 5 reveals that 93.3% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia have a positive perception regarding e-learning, indicating that e-learning can be implemented in schools.

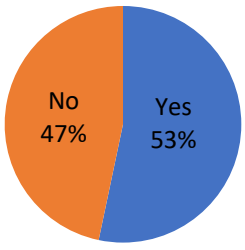

Figure 6. Category of e-learning accessible anywhere

Figure 6 indicates that 53.3% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia have a positive perception regarding the accessibility of e-learning from anywhere and at any time. Meanwhile, the remaining 46.7% have a negative perception.

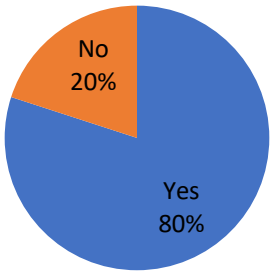

Figure 7. Category of e-learning can increase learning interest

Figure 7 shows that 80% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia have a positive perception regarding e-learning, indicating that it can increase students' learning interest. Meanwhile, 20% have a negative perception.

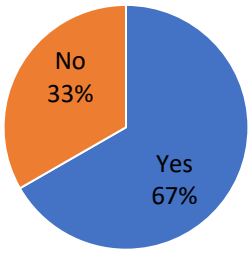

Figure 8. Category of e-learning is one of the effective learning methods

Figure 8 demonstrates that 66.7% of the Educational Technology students from the 2021 cohort at Toraja Christian University of Indonesia have a positive perception that e-learning is one of the effective learning methods. Meanwhile, 33.3% have a negative perception regarding e-learning as one of the effective learning methods.

Conclusion

It can be concluded that in general, students of the Educational Technology study program class of 2021 at Universitas Kristen Indonesia Toraja have understood the definition of e-learning. The results of the analysis show that students know the definition of e-learning, as many as 62% of students define e-learning as a learning that is done online (online) and the remaining 38% define e-learning as technology-based electronic learning. Students define e-learning in two perceptions, namely as online learning and as technology-based electronic learning. And in essence both perceptions are both definitions of e-learning in line with expert opinion.

The application of e-learning as a learning media is not just a teaching process but requires the readiness of all related parties including policy makers, lecturers and students

considering the existing conditions, so that it can be used optimally in lectures. It can be concluded that as many as 95.5% of students give a positive perception in the category of the effectiveness of collecting assignments via e-learning. 86.4% of students gave positive perceptions related to e-learning in the form of interactive quizzes compared to direct quiz in class. However, it was identified that 86.4% gave negative responses related to e-learning in the form of online virtual discussions. Students prefer in-class discussions due to difficulties in understanding the material.

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