

APPLICATION OF E-LEARNING AS A LEARNING MEDIUM FOR INFORMATION TECHNOLOGY

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Abstract

With advances in internet network technology, information and communication services are no longer constrained by time and place constraints. Online learning emphasizes distance learning to provide the best educational process possible. Online learning is a type of information technology advancement that can be used as a teaching aid. In this work, the authors use descriptive research techniques to conduct a more in-depth analysis of the theories and trends in advances in online learning. The University of Illinois at Urbana-Champaign is a pioneer in the development of online education. In a computer-based education system, the University of Illinois has started e-learning by utilizing a computer called PLATO. The e-learning classroom learning model is a significant development in the teaching and learning process because it can reduce variations in teaching strategies and course materials and increase the consistency of learning. To prepare, with the help of technology, when everything shifts to the digital era, both in terms of methods and content, online learning systems are very important.

Keywords: E-learning, Information Technology, Learning Medium

1. INTRODUCTION

The development of internet technology has changed the paradigm of information and communication services, which are no longer based on space and time constraints. They can get the information they need whenever and wherever they choose thanks to the internet. The education sector is the one with the fastest technological developments. The potential of the Internet as an essentially stable source of information has diminished. Perhaps some college level teachers have adopted the current distance learning system, such as using the internet as the primary tool and medium for teaching and learning.

ICT is used mostly in distance learning to facilitate an effective educational process. The presence of ICT seeks to dismantle barriers for everyone to obtain rich information from various sources and locations and to engage with others or develop mutual relations that are beyond the reach of significant distances. With the help of proactive and inventive innovations, the use of ICT in education can adapt to various changes in routine, environment, and acceleration that occur in the educational environment (Sukarno, 2020).

The priority scale of teaching and learning activities, institutional management systems, trainer teaching techniques, and student learning techniques will all change significantly as a result of the use of information and communication technology (Adri, 2007). In the form of student activities that love learning and are based on autonomous business, the use of ICT in education can promote a sense of independence and learning action (Altania & Sungkono, 2021).

If we don't use internet technology, our education system will be very left behind given the growth of this phenomenon. Lecturers are at least competent and suggest using existing resources on the internet as learning resources and teaching materials, even if they have no plans to organize internet-based teaching or education.

Online learning is a type of advancement in information technology that can be used as a teaching aid (Widianto, 2021). Online learning is a development that can be utilized in the world of education to change students' abilities apart from providing learning resources and also causing certain learning difficulties, such as:

- 1) Computers, laptops, tablets, cellphones, computer networks, the internet, and other multimedia devices can be used as online learning infrastructure.
- 2) Not all students are accustomed to learning how to use ICT devices, and not all teachers have the expertise to use ICT devices such as computers, laptops, tablets, cellphones, and so on.
- 3) Teachers and students struggle to decide which LMS (Learning Management System) to use for learning activities because of the many options available. With the use of online instruction, students actively participate in the learning process by actively observing, demonstrating, presenting, etc. Course content can be presented virtually in a variety of ways to make it more engaging and dynamic and encourage students to progress in their learning.

Because of advancements in the technology of internet networks, information and communication services are no longer restricted by the limits of time and location. Distance learning is emphasized through online learning platforms to deliver the most beneficial educational experience possible. Based on the previous background, this study aims to analyze the application of e-learning as an information technology learning medium.

2. RESEARCH METHODS

This type of research was descriptive qualitative (Yusuf, 2016). The research method used in this research was library research method. This library research method was used to determine the actual use of the online learning environment, especially for students. In this study, the data needed was information that was relevant to the focus of the study (Sugiyono, 2017). Sources of research data were obtained from relevant literature, such as books, scientific papers or articles, and so on. The data collection technique used in this library research was the documentation method. The data analysis technique used in this library research was the content analysis method.

3. RESULTS AND DISCUSSION

3.1. Research Results

3.1.1. E-learning Concept

Electronics and learning are two words that make up online learning. E-learning is defined as a learning method that uses electronics or involves teaching and learning activities that take place online. Online learning is learning or teaching that utilizes electronic media, especially the internet. Online learning, in general, is instruction based on electronic learning procedures that utilize information technology as a useful teaching instrument. Online media and websites are usually used for online learning. Online

learning content can be delivered via text in documentary formats, instructional videos, audio-only or audio-explanatory formats, and in some cases, streaming YouTube videos. The website offers access to all of these study resources, including notes, tests, and exams.

A number of specialists also characterize online learning. In accordance with the definition Ramanujaloo Naidu (2006), “online learning often refers to the use of networks for information and communication technologies specifically designed for teaching and learning processes”. Bullen & Janes (2006) characterize “online learning as a teaching and learning process that arises when, despite distance constraints, internet technology is used to mediate, assist, and engage the learning process”. A more inclusive definition of e-learning is given by Hartanto (2016) “in the education system, e-learning refers to learning that is carried out electronically”. According to Darmawan (2011) “E-learning is a type of traditional learning that is primarily provided in information technology and in digital form”. Darmawan argues that “online teaching should be structured similarly to a traditional classroom, as if students were learning in person”. The main difference is that the format has changed to take advantage of the Internet and digital systems. The main benefit of online learning is that it allows for the effective use of time and location. Education is no longer constrained by time and place thanks to online learning. This means that there are no more obstacles to carrying out learning activities between regions and even between countries.

3.1.2. History of E-learning

The University of Illinois at Urbana-Champaign is a pioneer in the development of online education. Within its computer-based education system, the University of Illinois has implemented a computer-enabled e-learning program called PLATO. Since then, technological advances and the growth of online learning have gone hand in hand. The computer-based training (CBT) period, which began in the 1990s, saw the birth of several e-learning programs that used standalone computers or were packaged on CD-ROMs. The information displayed can be in the form of text or multimedia files in mpeg-1, avi, or mov format for audio and video.

Computer education was not recognized by the general public until 1994. Therefore, computer-based training (CBT) is widely available in some of the most attractively packaged versions. The Learning Management System (LMS) was introduced in 1997. This educational platform coincided with the global shift to the internet as a result of advances in internet technology. The need for knowledge that can be obtained quickly is considered very important, even when geography and distance are no longer constraints.

The Learning Management System was ultimately developed to respond to this need. New thinking methods that can complete interoperability between LMS systems have emerged as a result of the rapid development of LMS. Some examples of new standards include those published by the Airline Industry CBT Committee (AICC), IEEE LOM, ARIADNE, and IMS standards.

The invention of web-based e-learning programs is credited with occurring in 1999. A common development that transformed teaching and learning administration and teaching systems was the further evolution of learning management systems into web-based e-learning applications. Newspapers, periodicals and other educational websites are linked to the learning management system. Multimedia elements such as interactive

presentations and streaming videos, which can be accessed in a variety of smaller, more standard data formats, are also added to e-learning content to enhance it. Flexible and effective learning is possible through online education. As a result, it is said that e-learning is the learning system of the future that is constantly evolving.

E-learning has been used in many educational institutions in Indonesia, from elementary schools to tertiary institutions. E-learning application training has been introduced in both formal and informal educational institutions. Gajah Mada University, University of Indonesia, Open University, National Land Agency (hereinafter referred to as LEMHANAS), Financial and Development Audit Agency (hereinafter referred to as BPKP), Ministry of Industry, and Ministry of Environment and Forestry are some examples of government institutions and organizations that have implemented e-learning.

3.1.3. E-learning Function

Following are some of the characteristics and advantages of e-learning, according to the book “Implementasi, Strategi, dan Inovasi E-Learning” by Simanihuruk et al. (2019).

- 1) Add-ons (supplements) Students have the freedom to choose and not choose when it comes to risky learning. They are not required to use online learning in the process of learning English, or any other language.
- 2) Congruent (Supplements) Through online learning forums, lecturers and professors can add textbooks and other learning resources. Teachers can use online learning forums as a tool to increase students' understanding of topics, in addition to carrying out enrichment or empowerment procedures.
- 3) Substitution, The substitution approach is used as a substitute for the conventional teaching methodology (face-to-face model), which, with the help of the internet, is then changed to using electronic media. Learning that utilizes online communication seeks to achieve time efficiency and more adaptive conditions.

3.1.4. Strengths and Weaknesses of E-learning

- 1) Economical
Learning can be done anytime and anywhere by using online courses. Due to the fact that teachers and students do not have to pay the costs often associated with traditional classrooms, such as transportation, meals, buying books, etc., learning can be done cost-effectively. Only equipment or equipment plus internet fees are issued for e-learning purposes.
- 2) Study time can be scheduled and flexible.
Study assignments can be completed on time with online learning, just like with traditional learning. It's a solution for students who often struggle to organize and select their learning resources and find the best time to study.
- 3) Enables performance tracking.
E-learning technology allows educators to measure or monitor student progress, especially when analyzing the performance of the material provided.

3.1.5. The Advantages and Disadvantages of Online Learning

- 1) Excess
 - a. Give children the opportunity to learn on their own. On the other hand, some learning processes occur in the classroom when face-to-face (offline) learning is implemented, indicating that the instructor is more actively involved than the

- students.
- b. Convenient study location and time. This shows that all teaching and learning activities can be carried out by utilizing electronic media anytime, anywhere, and with intermediaries.
 - c. Encourage students to think creatively and actively.
- 2) Lack
- a. Many students abuse technology. Students can concentrate on topics that interest them, such as. Teaching students to use technology.
 - b. Using the internet can sometimes be a challenge. Network or signal limitations sometimes make it difficult to visit web pages, making continuous learning more challenging,
 - c. besides that the obstacles that arise cause discomfort for students, especially boredom while waiting for the network. to revive
 - d. The coach's verbal communication was not very clear. Limited public networks always hinder the educational process, especially communication. In addition, important issues related to the topic under discussion are discussed in the communications sent.

3.2. Discussion

3.2.1. Solutions to Problems and Challenges when Using Online Learning as Information Technology Learning

Online education is sufficient to have a variety of positive consequences. However, there are some problems and difficulties that must be faced by students and especially teachers. The authors offer some answers to the problems and difficulties associated with adopting online learning as information technology learning in the following sections, with reference to a number of previous literature studies.

- 1) Human Resources, The human element plays the biggest role and is the most crucial element in implementing the online learning paradigm. Because it is an e-learning subject, HR plays a significant role. Just like mastering computers and internet networks, mastering technology in online learning can certainly be done by everyone (Hendrastomo, 2008). Learning is reduced if these two problems continue to be a problem such as the effectiveness of Supporting Facilities and Infrastructure
- 2) Facilities and infrastructure also determine the success of online learning, apart from the importance of involving human resources in the process. The learning process is very important for the online learning process because it is supported by reliable infrastructure. Filling procedures or availability of infrastructure must also be provided as needed because of the high degree of certainty. Computers, internet network connections, e-learning software, and other important elements that drive the success of e-learning include supporting services and infrastructure as solutions to problems in the use of e-learning. To overcome problems when using e-learning, additional steps must be taken so that the use of e-learning can be properly implemented in the learning process.
- 3) The following solutions will be used in implementing information technology based learning: For learning activities, both educators and students need access to digital technology and the internet. In this situation, educational institutions must provide usable infrastructure and facilities. For example, is a laptop or computer, LCD

screen, and the internet accessible. This will definitely help with ongoing learning and facilitate it. In addition, instructors must equip students and themselves with high-quality, practical learning materials.

4. CONCLUSION

The e-learning classroom learning model is a significant development in the teaching and learning process because it can reduce variations in teaching strategies and subject matter, increasing the consistency of learning. To prepare, with the help of technology, when everything shifts to the digital era, both in terms of methods and content, online learning systems are very important.

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