

E-Learning in Higher Education: Challenges and Solutions

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Abstract

The Covid 19 pandemic that has hit the world has changed many ways of life. Education is one of the sectors affected by this pandemic. Learning, which has been carried out directly through face-to-face, has switched to online E-Learning to prevent the expansion of the COVID-19 pandemic. Universities face a number of challenges in implementing E-Learning. This study aims to identify the factors that become obstacles in the implementation of E-Learning and strategies that can be applied to overcome the inhibiting factors of E-Learning. These challenges come from the human aspect, technical aspects, financing, E-Learning content. For this reason, universities must prepare strategic steps so that obstacles or challenges do not affect the quality of learning that occurs between lecturers and students.

Keywords: E-Learning, College, Challenges, Strategies.

1. Introduction

The attack of the corona virus (SARS-COV-2) which later caused a pandemic has caused changes in the order of human life. The virus that originally originated in Wuhan China and was first confirmed in December 2019 has claimed many lives. The World Health Organization (WHO) as the world organization in charge of health announced a global health emergency in January 2020. This condition made the Indonesian government create a Covid prevention protocol to prevent the expansion of COVID-19 mitigation, such as social distancing, physical distancing, the obligation to wear masks, and often washing hands. The world of education has not escaped the negative effects of Covid 19. In Indonesia, the existence of this pandemic has changed the usual education model. Before the Covid 19 pandemic, the E-Learning model that was usually implemented was face-to-face E-Learning / learning outside the network. However, after the COVID-19 pandemic hit Indonesia, the Ministry of Education and Culture (Kemendikbud) in March 2020 issued a circular number 36952 / MPK.A / HK / 2020 calling for online E-Learning from home for students and students.

As a follow-up to the circular letter, there were many kinds of implementations by lecturers to conduct online E-Learning. There are lecturers who use WhatsApp group, google classroom, kahoot, and several other applications to conduct their lectures. The variety of applications used by lecturers makes universities develop Learning Management Systems (LMS) which must be used in learning activities. LMS has several types such as Moodle, D2L, Edmodo, Blackboard, Canvas, and other applications developed by each university. Online / online E-Learning has actually been used by educators / lecturers for a long time. Before the Covid 19 pandemic hit, most universities used online E-Learning combined with face to face E-Learning or what we know as blended learning. Blended learning is learning that is carried out using face-to-face and combined with learning through E-Learning (Tinio, 2002).

The use of online E-Learning at that time was more optional. There are attitudes that support the use of ICT as a supplement and not as a substitute for traditional teaching (Gay, Mohan, Devonish, Alleyne, & Alleyne, 2006). When a pandemic hit, universities must make full use of online E-Learning in their lectures. Many studies that studied the barriers to e-learning were conducted before the pandemic. Most studies on barriers to E-Learning implementation are carried out in normal situations (Hadijah & Shalawati, 2017). In addition, the application of E-Learning during this pandemic still faces various obstacles from lecturers, students or technical problems. (Surry, Ensminger, & Haab, 2005) suggest that the integration of learning technology in education faces many obstacles, such as technological infrastructure, student competence, technology satisfaction and instructor motivation. Many tertiary institutions fail to implement E-Learning due to poor strategy, high technology costs, resistance to change, competition and poor course delivery.

2. Literature Review

E-learning is a learning tool to deliver learning materials that can be used at all levels of education, using the internet, intranet or extranet network (Tinio, 2002). E-Learning is the result of knowledge transfer and innovative E-Learning which is heavily influenced by the emergence of the Internet and Information and Communication Technology (ICT) (Qureshi, Ilyas, & Yasmin, 2012). In E-Learning there will be a transfer of knowledge and skills from teachers to students through the use of computer networks (Alshwaier, Youssef, & Emam, 2012). E-learning is a virtual education system that is supported by Information Technology (IT) (Hoq, 2020).

The development of information technology that runs rapidly has a positive impact on learning using E-Learning. E-Learning is different from the prevailing form of teaching because it is not limited by time and space (Yu, Chang, & Chen, 2016). The emergence of E-Learning presents a cheaper and more cost-effective approach to teaching in higher education. Through the use of E-Learning, it will be easy for students to exchange information and data they have (El-seoud, Seddiek, El-khouly, & Nosseir, 2014). The use of ICT in Higher Education has the potential to improve the quality of teaching and learning (Kituyi & Tusubira, 2013). E-Learning is a promising educational paradigm, through increasing access to information technology and reducing costs (Alshwaier et al., 2012). E-learning is considered a teaching and learning process that takes advantage of advances in technology, where there is no need for a physical meeting between teachers and students, and whose purpose is to facilitate flexible (anytime and anywhere), interactive, and student-centered learning (Martinez -Caro, 2009). The E-Learning platform is the right solution in class management and avoids the potential for errors in identifying the real name of homework senders (as often happens in email sending) (Benta, Bologna, & Dzitac, 2014). The use of the E-Learning system has a significant effect on academic performance (Islam, 2016). E-learning is one part of distance E-Learning. In E-Learning there are two main things, namely "distance" which refers to the separation between educators and students and "use of media" as a tool for communication. E-Learning will be able to solve the "space" problem in learning

3. Methods

This study uses a library research methodology. Library research is a method used by researchers by looking for relevant references from previous research, both from books, national journals and reputable international journals. The purpose of using this literature study is to obtain theories and results of previous research that will be used to analyze the problems taken so that a complete conclusion will be obtained from the topic being discussed. The keywords used for research in the

education database are "barriers to E-Learning, effective E-Learning strategies, E-Learning, online teaching". In addition, studies must meet the following criteria: studies must be carried out in the field of higher education, studies must focus on barriers to the use of E-Learning for lecturers, as well as up to date empirical studies.

4. Results and Discussion

Barriers to Learning E-Learning

Learning using E-Learning in Indonesia is not easy. The geographic location of Indonesia is very wide and spreads from Sabang to Merauke, making the diversity of networks and access in every region of Indonesia. The cost for internet access is not a cheap matter. The abilities and willingness of lecturers to switch to online E-Learning also vary widely. The E-Learning infrastructure is also still minimal. Learning materials and e-learning content are still limited.

Barriers to the use of E-Learning are very heterogeneous including personal barriers, organization, content, situations, learning, and technology (Oye, Salleh, & A. Lahad, 2011). The integration of information technology and education is something that is complicated, because it involves aspects of technology, curriculum, institutional readiness, competence of educators, and funding (Tinio, 2002). (Ali, Uppal, Gulliver, & Ali, 2018) identified barriers to E-Learning, namely technology infrastructure, technical support, bandwidth and connectivity issues, software and interface design, compatible technology, virus attacks, and quality computers bad. Many educators are not ready and have no knowledge of E-Learning (Donitsa-schmidt & Ramot, 2020). In addition, (Aboagye, Yawson, & Appiah, 2020), also revealed that E-Learning in this college has several problems such as internet, smartphone and laptop problems from students and lecturers who are less supportive, as well as unpreparedness to do E-Learning from lecturers. and students.

The use of E-Learning requires a strategy to overcome three inherent challenges, namely cost, quality and demographics. (Siritongthaworn, Krairit, & Paul, 2006) reported that all instructors had little (or no) experience with online teaching methodologies. As a result, they lack confidence in using E-Learning. From the student's point of view, they revealed that poor availability of access points, slow network communication, and a lack of software applications challenged them to participate in E-Learning. The results of research from (Almaiah, Al-typicalawneh, & Althunibat, 2020) also show that there are three main challenges that hinder the use of the e-learning system, namely (1) management problems, (2) technical problems of the e-learning system, and (3) financial support issues. E-learning programs become a bottleneck for most students due to limited internet connections and a lack of technical knowledge about technological devices (Owusu-Fordjour, Koomson, & Hanson, 2020).

The implementation of E-Learning in higher education is still not optimal in its use and utilization, due to an inaccurate framework that hinders the integration of E-Learning in the education system (Mayoka & Kyeyune, 2012). Lack of support from senior management, unpreparedness for innovation, misconceptions about what E-Learning is, awkward attitude to E-Learning activities, coupled with inability or unwillingness to change the system; and poor employee development (Nichols, 2008). Another problem relates to the lack of support from the head of the institution related to the cost of ICT training for teachers, the purchase and maintenance of technology and equipment for electronic learning (Nasser & Abouchedid, 2000).

Availability of E-Learning equipment, the importance of technical and pedagogical support by organizations, insufficient time to study E-Learning and apply it to teaching practice, low self-efficacy of teachers in educational technology knowledge and skills, lack of recognition of the efforts teachers

have made, lack of knowledge, skills, and motivation among students and teachers are some of the inhibiting factors in the application of E-Learning (Jokiaho, May, Specht, & Stoyanov, 2018). Internet and electricity problems are a barrier to using E-Learning (Radha, Mahalakshmi, Kumar, & Saravanakumar, 2020).

Maintenance and supporting computer systems for E-Learning requires skilled individuals so that organizations will require high costs (Sharif, 2014) as well as the many infrastructure problems inherent in using E-Learning (Talebian, Movahed, & Rezvanfar, 2014). Gender and external sources are obstacles in the use of E-Learning (Gamdi & Samarji, 2016). Engineering resources and infrastructure are barriers to distance Learning (Al-balas et al., 2020). Individual problems, micro problems (inadequate environment and facilities), macro problems (unsupportive government policies, economic factors) and ecosystems (inadequate technology, local government, local organizations) are factors that hinder the implementation of E-Learning (Doyungac, Tanhan, & Kiymaz, 2020).

The problems inherent in E-Learning problems before and during the pandemic were not much different. Because during the Covid 19 pandemic, the application of E-Learning is a must as one of the steps to prevent the spread of Covid 19, so like it or not, universities must implement E-Learning. So that the application of E-Learning in higher education is mostly "emergency teaching". Higher education does not have proper preparation for E-Learning. The limitations of experts for designing learning and preparing content and teaching materials greatly influence the quality of E-Learning produced. In addition, there is resistance from lecturers / teachers to implement E-Learning. (Widayati, 2020) said that not all lecturers in Indonesia use online E-Learning.

Effective E-Learning Strategies

Learning using E-Learning is a necessity at this time. E-Learning should not change the quality of learning carried out to students. Higher education institutions must prepare quality assurance so that there is no wide gap in the quality of learning before and during the Covid 19 pandemic. Higher education must be able to realize student success and satisfaction, be able to guarantee the quality and satisfaction of lecturers, be able to create reliable supporting technology for interaction academic and administrative E-Learning.

The strategy implemented by universities so that barriers to E-Learning during the Covid pandemic have been widely studied before the Covid 19 pandemic hit the world. There are 4 key success factors for creating effective E-Learning for higher education, namely human consideration, instruction design, development, and social delivery (Prougestaporn, Visansakon, & Saowapakpongchai, 2015). (Qureshi et al., 2012) offer several strategies that can be used to overcome barriers to e-learning, namely: (1) The problem of limited funds can be overcome by using open source software and receiving funds from the government and public-private partnerships, because some basic investment in technology infrastructure is needed to benefit from ICTs; (2) Mixed learning techniques that involve a balanced mix of face-to-face interactions, independent learning and online interactions. This will help students get accustomed to new ways of learning gradually; (3) Establish a national E-Learning development center with a focus on the development and coordination of E-Learning activities in educational institutions.

Higher education that intends to introduce and integrate E-Learning must first acquire and prepare an adequate ICT infrastructure to offer an excellent E-Learning platform to students and lecturers. In addition, higher education management must ensure that existing infrastructure is upgraded regularly to keep pace with technological changes. One way to achieve infrastructure needs is through exploration of various funding alternatives such as establishing partnerships with the government and private sector actors (Kituyi & Tusubira, 2013).

There are several strategies for E-Learning to be effective according to (Martinez_Caro, Cegarranavarro, & Ccycle-carrio, 2014), namely (1) instructors must adopt an active role and make additional efforts to encourage student participation; (2) allocate resources to teach students how to learn online and assist them in their transition to E-Learning; and (3) investing more resources to provide different ways to promote teacher-student interactions. In addition, (Teo, Luan, Thammetar, & Chattiwat, 2011) said that substantially, the success of E-Learning is influenced by the extent to which potential users (students) are willing to use it. The drivers of E-Learning user satisfaction relate to aspects of the information and systems provided, the reliability of educators on E-Learning, an authentic assessment system, and good relationships between students and lecturers (Cidral, Oliveira, Felice, & Aparicio, 2018).

According to (Teo & Koh, 2010) states that to achieve effective E-Learning can be done by providing structured training on computer skills, expanding access to the use of computing hardware and software, and providing facilities to use computers for personal and educational purposes. teaching by using computers that are integrated in the teaching and learning process. Human factors, technological factors and organizational factors are some of the factors that determine the success of the implementation of E-Learning (Ramayasa, 2015). Higher education institutions must understand and provide solutions so that technological, financial, institutional, lecturers and students barriers can create success in implementing distance E-Learning (Al-balas et al., 2020). Organizations must view E-Learning as a continuous process and realize the benefits of E-Learning. Therefore, institutional culture is indispensable for the successful implementation of E-Learning through the application of a clear and open communication strategy, sufficient resources, and the development of lecturers (Nichols, 2008). Technological infrastructure, E-Learning systems and E-Learning content are factors that affect the success of E-Learning (Fariani, 2013).

Strategies in adopting E-Learning should focus on raising awareness about E-Learning for all education stakeholders, incorporating more technical and managerial support and motivation schemes through incentives that can ensure effective engagement and retention of staff (Rolfe, Alcocer, Bentley, Milne, & Jan Meyer-Sahling, 2006). Training can be the most effective strategy to overcome financial constraints, lack of support and teacher resistance to change (Kisanga & Ireson, 2015). Funding and strategic policies of the institution (high-speed internet access and reliable networks available, professional development programs, expanding the IT service department, ensuring that the latest software and hardware is available to all staff members is needed to promote ICT in education (ICT) and E-Learning (Gamdi & Samarji, 2016). Parties involved in onlinE-Learning must study technology well (Dhawan, 2020).

5. Conclusion

The problems inherent in E-Learning problems before and during the pandemic were not much different. Because during the Covid 19 pandemic, the application of E-Learning is a must as one of the steps to prevent the spread of Covid 19, so like it or not, universities must implement E-Learning. So that the application of E-Learning in higher education is mostly "emergency teaching". Higher education does not have proper preparation for E-Learning. The limitations of experts for designing learning and preparing content and teaching materials greatly influence the quality of E-Learning produced. The problems in implementing E-Learning come from the human aspect as a user, technical aspects, financing, E-Learning content. To create E-Learning that is able to create quality assurance is not an easy matter. Synergy between universities, government and the private sector is a must. Through

the synergy created, it is hoped that E-Learning will be easy to use by lecturers and students, has interesting content so that it is able to realize meaningful learning, and is low cost.

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