

Lesson Learned Distance Learning Program During the Covid-19 Pandemic: A Case Study of Schools in Eastern Indonesia

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Abstract. *It is an important part of a paper whose main function is to attract readers, managing editors, and reviewers. Therefore, abstract must be written attractive and can explain the entire content of the paper. It is better if the abstract is written after the paper is finished so that all aspects can be written. Abstract writing is brief and clear about the problem so that abstracts should not be given quotes or theories. The essence of an abstract consists of the research objectives, research methods, and research findings. Research objectives can be written directly at the beginning of the paragraph or after a few sentences of the prologue. However, the methodology is an important part of a study because the success of the research depends on proper methods. The maximum number of words in an abstract is 250 words. In addition to words or terms in keywords, it serves to make it easier to classify the type of paper, so do not use phrases.*

Keywords: *Write the keywords which used in the paper maximum of 5 words/phrases*

For examples: Accounting; Banking News; Creative Industry; Digital World; Economic Outlook

1. INTRODUCTION

The Covid-19 pandemic has impacted many human activities, including the learning for higher education throughout the world. The sudden and unprepared change has caused various problems in Indonesia's national education system. This pandemic has changed the conventional face-to-face learning model into an e-learning model using internet technology and electronic devices. Most of the higher education learning activities in Indonesia are using a face-to-face model which is implemented in the classroom. This model is considered very effective in conveying learning material to students because of the direct interaction process between the two parties.

E-learning is a subcategory of distance education that has been popular since the mid-1980s. It is a type of learning technology that uses web browsers and other systems to communicate with students (Hassanzadeh, Kanaani, and Elahi, 2012). The rapid development of computer and internet technology has led to no single agreed definition of e-learning (Al-Fraihat, Joy, Masa'deh and Sincliar, 2019). Basically, e-learning is a training activity, distance learning, or education delivered online through a computer or other digital devices. In line with the rapid development of computer technology, e-learning has increasingly developed to become easier to use. The Indonesian term is "Daring" learning which stands for "in the network". There are many definitions of e-learning, among others, e-education, online learning systems, distance learning, process of obtaining information through the use of technology and electronic media. Several

other definition of e learning are the use of various information systems, services, and technology (Nikou and Maslov, 2021) where students can access their learning materials anytime from anywhere (Alam, Mahtab, Niam, Naveed, Patel, Abohashrh and Khalel, 2021) flexible time that can be done from their respective homes and can reduce operational costs (Shkoukani, 2019).

Currently, many students use various communication gadgets, such as smart phones or Personal Digital Assistants (PDA) (Zota, Stanescu, Stanescu, Stanculescu, and Stanescu, 2008). In fact, e-learning has proven to be the only way to allow learning activities to continue during the lockdown due to the Covid-19 pandemic by using telecommunication technology to deliver learning and training materials (Sun, Tsai, Finger, Chen and Yeh, 2008) as well as applying other teaching and training methods (Govindasamy, 2001). According to Moore (2007) there is a process of interaction between students and other students in the e-learning practices (Koh and Kan, 2020). In addition, e-learning can disseminate information and knowledge online to people who need it for educational or training purposes (Shkoukani, 2019). There are two challenges regarding online learning, namely (1) equipping students with knowledge of new technologies; (2) to draw their attention to the main menu (Maaloul and Bahoum, 2021).

The use of e-learning as a new paradigm has had both positive and negative impacts on the learning model in universities in Indonesia, especially for lecturer and students. In fact, internet infrastructure which is still limited and not evenly distributed in various region in Indonesia is an obstacle in the development of e-learning. Based on data from the Inclusive Internet Index, Indonesia ranks 57 among the lowest countries in providing internet infrastructure in the world the index assesses four factors; availability, affordability, relevance, and people's preparedness to use the internet (Prasidya, 2020).

Therefore, there is still a lot of internet infrastructure work that needs to be provided to build a fully functional digital economy. This is a serious challenge for the government because the digitalization program can accelerate the transformation of global education in the 21st century, one of which is developing digital literacy. The use of e-learning can improve equity and quality of secondary and higher education in Indonesia. In addition, the use of e-learning can have a positive influence on student's abilities and insights. The added value of e-learning is that it can reduce the operational costs of the teaching-learning process because it does not require classrooms special facilities (Faisal and Kisman, 2020).

2. LITERATURE REVIEW

2.1 E- Learning and Distance Learning

The evolution of Indonesia' distance education from face-to-face education programs to e-learning education that can cross space and time (<https://Kopertis3.or.id/v2/wp-content/uploads/paulia-pannen-Kebijakan-PJJ-dan-E-learning.pdf>). E-learning has entered the mainstream of education and has been widely applied in many universities (Al-Fraihat, Joy, Masa'deh and Sincliar, 2019) which are organized educational programs where teachers and students are physically separated. There are three types of e-learning education: 1) audio-based, 2) video-based, and 3) computer-based (Yu-mei, 2011). The advantage of the audio-visual-based e-learning program is that it can explain material more clearly, interestingly and have flexible study times.

Based on *Permendikbud* No 109/2013 that distance education is a teaching and learning process carried out remotely through the facilities of various communication media. In fact, this program can be carried out across regions and countries. E-learning in Indonesia is known as the distance education (hereinafter PJJ) program which has the initial goal of limiting the massive spread of Covid-19 among students and still being able to carry out teaching and learning activities during the lockdown. The PJJ program refers to Circulars of the Minister of Education and Culture Number 2 of 2020 and Number 3 of

2020 concerning online Learning and Working from Home (WFH) in the context of preventing the spread of Covid-19 pandemic.

The PJJ program has many advantages, among others, it has replaced printed books so that it can reduce paper usage and can last a long time. But, this program also has several weaknesses caused by various factors, especially the inadequate internet network so that the learning process is often interrupted or the voice is not clear. Currently, e-learning has grown rapidly, by utilizing the development of computer technology in accessing learning resources using various equipment such as laptops, PCs, mobile phones, and tablets. The main focus of e-learning is to adopt and implement new and more advanced IT in the education industry (Alsabawy, Cater-Steel and Soar, 2011). For more than two decades Poland has been developing e-learning and blended learning so that it can carry out a rapid transformation process from offline to online education system (Tomczyk and Walker, 2021). So, for Poland and some countries in the world the use of e-learning is no problem. However, the presence of educational technology has encouraged universities to gradually incorporate its use in higher education learning systems (Fearnley and Amora, 2020). In short, the quality of e-learning programs is determined by how learning resources can create interactive and student-centered learning.

When the Covid-19 pandemic outbreak occurred, several universities in Indonesia were not ready to deal with it due to various obstacles, especially internet infrastructure was inadequate or even unavailable. This is because the provision of IT requires large costs so that only a few large universities are able to provide it. As a result, the implementation of e-learning in Indonesia has not been optimal especially for small universities located in areas such as the Eastern Indonesia Island. Many villages outside Java, do not yet have internet infrastructure, especially areas classified as 3T (Lagged, Frontier, Outermost). For example, areas on the border of East Timor with Timor Leste, Papua Province, and North Maluku Province. Especially at the border with East Timor, apart from inadequate internet infrastructure. Power outages also often occur in remote areas, causing difficulties in using the internet. The Finance Minister stated that over 20,000 villages now lack adequate internet connectivity. In Indonesia, state budget investment (APBN) in digital infrastructure has reached Rp75 trillion (US\$5.2 billion) during the 2019-2022 term (Olivia and Suharto, 2019). The development of digital infrastructure will support the transformation of various sectors such as the economic, health and education sector. Opportunities for more democratic and just development can be realized through digital technology. Thus, many sectors are accessible to the public.

Several other factors hinder the implementation of the e-learning such as limited human resources with computer skills, including lecturers and students. For most students, the price of equipment for e-learning such as smartphones is expensive. Regarding the e-learning material, the teacher's minimal mastery and experience in terms of hardware and software is the most striking factor in the e-learning obstacle. As a result, the learning material he delivered was less interesting and incomplete.

3. RESEARCH METHODS

Research on teaching practices using the PJJ model at several universities in Eastern Indonesia during the Covid-19 pandemic, particularly regarding internal and external constraints in implementing PJJ. This research using case study method as an empirical investigation that explores a current phenomenon within its real-life environment, particularly, when the boundaries between phenomenon and context are unclear. An in-depth explanation and analysis of a limited system whose implementation process is combined with a study unit (case) and the product of this type of investigation. The research object was chosen randomly using purposive sampling. The research sample used purposive sampling which selects informants who have the most relevant and adequate data end their professions according to the research topic (Yin, 2011). The

informants of this research are lecturers at various universities in the Eastern Indonesia Region. As a reference, online interviews were also conducted with several lecturers in the city of Bandung and several Asian countries such as Malaysia, Vietnam, India, and Uzbekistan. The reason is that e-learning is a global phenomenon during the Covid- 19 pandemic. The aim is to explain the phenomenon of e-learning in practice Eastern Indonesia and in the global context. Data gathered using a variety of data gathering methods, including classroom observation, field notes, interviews, questionnaires, focus groups, and so on (Tracy, 2007).

4.RESULTS AND DISCUSSION

4.1 Information Technology (IT)

The word “information technology” refers to the knowledge process and the processes used to process, transfer, and create information in progress as an source of significant technology (IT) has prompted advancements in a variety of disciplines, including finance, business, health, and education (Al-Fraihat, Joy,Masa'deh and Sincliar, 2019). The education industry is regarded as one of the most profoundly influenced by advance in information technology (Alsabawy,Aileen and Soar, 2011) has been widely employed in educational settings to convey information for teaching and learning, and e-learning is an emerging paradigm of modern education (Nikou and Maslov, 2021).

The purpose of Information technology (IT) is to design and maintain computer-based information systems that include learning and instruction processes and systems, computer hardware and software, telephone, video equipment, etc. According to Apulu and Latham (2010), the information technology revolution has offered many companies with both opportunities and challenges.

Today, the internet provides a wealth of learning materials in a variety of media (e.g., text, photos, audio, and videos), allowing for self-paced learning and overcoming geographical borders (Al-Fraihat, Joy,Masa'deh and Sincliar, 2019).Information system include both information service and information technology (IT), with service referring to the usage of IT (Nikou and Maslov, 2021). Information and communication technologies (ICTs) to reduce waste, improve efficiency, and unless creativity. The reach of ICT in education has opened many possibility to integrate with existing curricula and support its development but this opportunity has not been fully exploited by many institutions.

The rapid development of information and communication technology (ICT) has had an impact on teaching and education system around the world. The primary goal of ICT is to make the interchange of ideas and information more efficient and convenient, so that the people can share information more rapidly and save time and money by utilizing technology to communicate. The development of ICT in Indonesia has had impact on the learning process in schools and universities which are no longer fixated on conventional models (Faisal and Kisman, 2020). ICT has brough many new learning paradigm in to the world of education, such as E-learning and mobile learning. As a low cost option for large-scale dissemination of learning materials, in conjunction with widespread usage of digital technology. With the advancement of information and communication technology, nations all over the world have update their curricula to include computer science learning aspects in order to match worldwide trends and societal demand. Many people were taken a back by emergency e-learning, particularly those towns and groups with little financial resources and inadequate internet connection infrastructure (Tomczyk and Walker, 2021). According to Patwardhan et al (2020) crisis e-learning was adopted without proper teacher preparation. Without a foundation in e-learning education technique, educators have been compelled to swiftly adapt methods, material, forms, and didactic tools to digital communication spaces (Tomczyk and Walker, 2021). Without a doubt, information and technology are important components of the epidemic era (Husain, Idi, and Basri, 2020). This is the main prerequisite for adequate and widespread

distance learning for all regions (Nugroho, 2020). Without reliable technology or internet connection, some students find it difficult to engage in digital learning; this gap is visible between income levels within countries as well as across borders (World Economic Forum, 2020).

4.2 Distance Learning Program (PJJ)

Higher education has a significant contribution to disseminate knowledge and information to students, improve their functional skills, and make them efficient for living now and in the future. According to M Mailizar et al (2021) that around 4000 higher education institutions in Indonesia have switched conventional classes to distance learning. This number does not include elementary school (SD), junior high school (SLTP) and senior high school (SLTA). This research focuses on the implementation of the PJJ program in higher education. However, the PJJ program is a new paradigm in higher education system in Indonesia so that in practice it is not easy. To overcome these teaching, several schools have implemented various methods application such as WhatsApp group, and Zoom. One of schools in Nabire, Papua province, carries out a face-to-face teaching and learning process because the number of students is small. The PJJ program in the Tanimbar Island Regency uses WhatsApp Groups a lot because students' IT skill and internet network are not good. In addition, Zoom is considered to be wasteful of quota as happened in the city of Surabaya. While the learning program at Westminster International University in Kazakhstan, Uzbekistan. There is evidence that learning online can be more efficient in a variety of ways for individuals who do have access to the appropriate technology. According to several studies, pupils generally remember 25–60% more information when learning online compared to merely 8–10% in a classroom. This is mostly because students learn more quickly online; e-learning takes 40–60% less time to complete than traditional classroom instruction since students can go back and re-read, skip, or move more quickly through ideas as they see fit (World Economic Forum, 2020).

In addition, the factor of users who are less skilled can cause of learning management system (hereinafter LSM) to be not optimal as stated by Mkhize et al (2016) that lack of technological literacy skills among users has led to the failure of LSM. It is advisable to try to improve LSM by university and educational institutions aiming to provide intelligent aspects of online learning for different groups of students (Maaloul., and Y. Bahoum, 2021). Learning tools and technology in underdeveloped countries like Indonesia are still a major obstacle, especially in the Eastern Indonesia Region. In contrast to conditions in developed countries such as the United States, where mobile devices, including cellphones and tablets, are the most widely used digital technology on earth, that around 92 percent of US adults have cell phones, 68 percent have smartphones, and 45 percent have tablet computers. In addition, each category of ownership has increased over the last five years. According to OECD data, only 34% of students in Indonesia have access to a computer for schooling, compared to 95% of students in Switzerland, Norway, and Austria (World Economic Forum, 2020). The obstacles to the PJJ program include, among others, the uneven availability of digital infrastructure because Indonesia has not yet provided Information and Communication Technology (ICT) infrastructure (Nugroho, 2020).

A variety of e-learning applications can improve the classroom environment and offer fresh learning opportunities, such as Google Classroom, Moodle, and Webex. WhatsApp, Google-Meet, Instagram, Telegram, and Facebook are all recognized as common virtual platforms that encourage students to get lessons at any time and from anywhere (Husain, Idi, and Basri, 2020). SlideShare for useful presentation, infographics, document, and videos in PowerPoint, Word, PDF, or Open Document formats. This learning media was already popular and widely used before the Covid-19 pandemic. Therefore, many lecturers used this media in addition to PDF which is presented through the application Zoom. Platforms popular in Indonesia, for example, Zoom, WhatsApp, Google Classroom, Schoology, and Edmodo. Among these include

using Google Forms for quizzes or daily tests, Google Meet for synchronous virtual face-to-face learning, and Google Classroom as a learning management system. In order to use Google Classroom, educators must integrate any other learning systems they use (Aliantika and Rahmat, 2021). The difficulty of implementing PJJ in schools with supporting resources and technology does not ensure that they will be successful (Aliantika and Rahmat, 2021). There is a close relationship between social inequality, availability of access, and digital skills that affect the quality of PJJ (Nugroho, 2020).

CONCLUSION

The implementation of the PJJ program in Eastern Indonesia is less than optimal due to various factors, mainly due to the lack of internet infrastructure and geographical location in remote areas, surrounded by mountains or located in a valley. The geographical condition can reduce signal strength or even the signal disappears. So that the learning objectives and delivery of learning materials are not achieved. Therefore, internet infrastructure development is absolutely necessary if you want to implement e-learning evenly.

The second factor is that human resources who master IT in the regions are still very limited so that the utilization of IT is not optimal. The limitations of human resources in the IT field cause learning materials to be less attractive, the learning process less attractive, explanations incomplete, the evaluation process and assessment of student work less objective. Therefore, the use of learning platforms for practical subjects such as drawing, designing, architectural drawing and the like is absolute. Several learning platforms that are widely used in architecture courses are Linux and Jamboard. Without the help of learning platforms, it can cause learning activities for practical courses to take a lot of time. Mastery of LMS lecturers is still limited so that the lecture material is less interesting and less clear. In fact, LMS provides many facilities. The human resource factor needs to be improved through various trainings on making creative audio-visual-based learning materials so that the learning process is not passive.

Some of the obstacles that arise in the implementation of PJJ, among others, are that many teachers have difficulty managing PJJ. In addition, the majority of parents cannot optimally accompany their children to study at home due to various reasons, for example having to work in the fields, fields, factories, offices and so on. Another factor is caused by not having the ability to accompany their children while studying. Many parents in the 3T area have no education, so it is very difficult to accompany their children to study.

The development of internet in Eastern Indonesia, especially in the 3T type classification area (Front, Outermost, and Disadvantaged) is absolute. The goal is to achieve equal distribution of higher education. In addition, the Covid-19 pandemic phenomenon can be used as an initial momentum for the development of internet-based higher education in Indonesia.

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