

THE INTEGRATION OF INFORMATION TECHNOLOGY IN ENHANCING TEACHING AND LEARNING IN RESPONSE TO COVID-19 CRISIS

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Abstract

This research aims to examine the integration of information technology into teaching and learning by examining the function of information technology and technology integration techniques in preparing students to deal with a variety of integration opportunities and barriers in the current pandemic Covid-19 situation. This paper was written with the help of literature research, literature study, and interviewing techniques. In this study, data was collected through the use of papers, online journals, digital books, and interviews. The findings reveal that existing technology has various benefits and can be used not only for entertainment, but also for proper use of existing platforms and access to all learning content without stuttering about technology. Increasing integrity of information technology leads to the modification, dissemination and creation of information innovations that have not been carried out by telematics and education professionals.

Keywords: *Information Technology, Integration, Teaching and Learning*

1. INTRODUCTION

The existence of the Covid-19 case raises serious concerns about the safety and health of the Indonesian government, particularly its youth. The Ministry of Education and Culture's 2020 Circular on Standards for the Implementation of Home Learning in Emergencies of the COVID 19 Outbreak establishes guidelines for the learning process during the COVID-19 pandemic. Additionally, the Ministry of National Education has published a roadmap for home-based learning at the Elementary School level. This can be accomplished in an emergency situation such as the current Covid 19 pandemic. Naturally, as more advanced methodologies are developed, this will have an effect on the advancement of today's learning media (Y. Muhammad, 2018). Where the COVID-19 pandemic is not yet over, technology and information are the solution for continual learning (Y. Muhammad, 2018).

However, educational technology can be present here in the form of media that aids in the facilitation of people's work, particularly in the field of education during the current outbreak. Numerous learning media technologies in the form of platforms are utilized to streamline the learning process at all levels of institutions, schools, and universities. Google Classroom, E-Learning, YouTube, WAG, Edmodo, Zoom, and Googlemeet are all examples of platforms that can be used to assist home-based educational institutions. Learning media, alternatively referred to as learning tools or resources, are used by teachers to communicate with their pupils (Yunanta, 2019).

Each platform employed in the learning process undoubtedly has a number of advantages and disadvantages. Distance education has evolved into a symbol of learning over time, combining the results of modern technology design with the goal of communicating educational information. Almost all institutions in developed countries, as well as numerous universities in Indonesia, have an e-learning system for distant education. Unfortunately, Indonesia's development of telecommunications systems and information technology has not been purpose-built for the purpose of providing information technology-based education, as if the two sectors of education and telecommunications operate independently and unrelated to one another. Whereas the state is obligated to accelerate the growth and development of an effective communication system and to educate and develop human resources. Therefore, this study examines the integration of information technology into learning by examining the function of information technology and technology integration techniques in preparing students to deal with a variety of integration opportunities and barriers in the current pandemic situation.

2. RESEARCH METHOD

This article was written with the help of literature research, literature study, and interviewing techniques. In this study, data was collected through the use of papers, online journals, digital books, and interviews, among other sources of information.

3. RESULT AND DISCUSSION

Developments in the field of information and communication technology (ICT) have resulted in significant changes in the way people live their lives. Higher education has included information and communications technology (ICT) in the form of e-Learning, both by choice and as a result of increasing demand in the environment. Many such benefits and advantages of e-Learning have been recognized by academic institutions; but they cannot overlook the ethical and moral issues related with academic integrity violations that occur in the context of online learning and education. Cheating, plagiarism, procrastination, and invasion of privacy are all difficulties that have been increased as a result of the use of electronic learning. (AbdulHafeez et al., 2013; A. Muhammad et al., 2015; AH Muhammad et al., 2014a; Muhammad & Shah, 2015)

E-Learning is defined as an advanced mode of learning and teaching is delivered without limitation of time or place using ICT tools and techniques (AH Muhammad et al., 2014a). To understand how academic integrity is violated in e-Learning, it is necessary to understand academic dishonesty and its various forms.

As explained by Dee and Jacob in (AH Muhammad et al., 2014b) that the majority of students have not fully realized the true meaning of academic integrity and therefore do not know when violating academic integrity in their e-Learning activities. Academic institutions of higher education face problems related to academic integrity even in traditional learning.

Online learning is often referred to as PJJ, online learning is learning carried out by teachers using media to conduct distance learning on the internet which is an intermediate in the learning process (Munir & IT, 2009). Besides that, Jamaluddin et al. (2020) mentions that there are still teachers and students who do not have technological devices as supporting

facilities for teaching and learning activities on online systems, such as laptops and gadgets. Even if they have these supporting facilities, sometimes the laptops or gadgets they have are inadequate to be used in carrying out the learning activities carried out (Astuti & Prestiadi, 2020), unfinished subject matter is delivered to students, then the teacher replaces it with another task (Argubi, 2020). According to Sadikin (2020) > 60% of people use Google Class Room, and as many as 50% say that the online system can simplify the process and coaching under certain conditions. Compared to offline distance learning, online learning has the advantage of distributing information and shortening information exchange time (Lutfi et al., 2020) as long as students are connected to the internet, they can download information or learning materials delivered anytime and anywhere (Yuliani et al., 2020).

Furthermore, research results by Fahmi (2020), Ma'ruufah et al. (2021), Nafisah et al. (2020), Novita & Hutasuhut (2020), Saptomo (2020), Sidqi & Auliya (2021), and Dewantara et al. (2021) shows the integration of technology in learning that is often used by teachers during this pandemic, namely e-learning applications and social media applications (google meet, email, whatsapp, google classroom, and so on). In addition, there are five factors that influence the readiness of teachers to integrate technology in learning, namely the perception of how capable a person is to use existing technology (Chen et al., 2021; Mercurio & Hernandez, 2020), the level of performance expectations that a person has (Andwika & Witjaksono, 2020; Venkatesh et al., 2003), positive or negative evaluation after using technology (Gao, 2020; Mercurio & Hernandez, 2020), interest in using technology (Elliott et al., 2013; Mercurio & Hernandez, 2020), training, mentoring, infrastructure, and service platform support, as well as all of which increase the use of IT (Chen et al., 2021; Venkatesh et al., 2003) which is several factors relates to resources and expertise (Chen et al., 2021; Cheng et al., 2015; Tarhini et al., 2015).

Further, A. Muhammad et al. (2020) investigated and prioritized the critical factors of violation of academic integrity which they concluded that the most critical factor was inappropriate guidance given to students.

Moreover, Ameli et al. (2020) highlight that preparation before providing learning services is one of the determining factors in successful learning, especially in online learning where there is a distance between the learner and the teacher. This is a concern and a new style that is implemented in the current learning process. Learning that is carried out by utilizing information and communication technology depends on the role of the teacher as a facilitator, not only as a provider of information, but also providing convenience in learning (Hanum, 2013). In the learning and teaching process, which is carried out by utilizing and using information and communication technology, this is one of the guidance from the teacher to always facilitate effective learning for students in carrying out learning during the Covid-19 pandemic (Munir & IT, 2009).

The nature of the openness of educators in accepting various suggestions and input from parents greatly triggers the enthusiasm of student learning, in contrast to an educator who is passive in the teaching and learning process, if it will gradually affect the psychological condition of students in the process of teaching and learning activities which conducted. Therefore, communication must be maintained neatly both from educators, parents as monitors of learning from home and students as the main object of online learning that is currently being carried out.

One of the theories that can be used in integrating technology into learning is the theory of diffusion of innovations which relates to several strategies and scenarios that can facilitate integration. In integrating technology into learning, integrators need to carry out five phases in integration, namely determining relative advantages, determining goals and assessments, designing integration strategies, preparing learning environments, evaluating and revising integration strategies. Meanwhile the integration model is described by the acronym ASSURE. offers six steps, namely; (1) analyzing students, (2) stating goals, (3) selecting methods, media, and materials, (4) utilizing media and materials, (5) asking for student participation, and (6) evaluating and revising. The theory of diffusion of innovations can be used to integrate, adopt, and create new ones. While the ASSURE theory is only used in developing and adopting technologies that are already available.

The availability of time for teachers, teachers, or teaching staff must be directed at mastering technology because the technology learning process requires sufficient time. Busyness to handle several subjects/courses and busy helping colleges and other schools or perhaps various other activities outside of the main task should be minimized in order to be able to schedule and make time schedules to deepen knowledge in using technology and even how to integrate it into learning.

Research findings by A. Muhammad et al. (2020) revealed that there is a need for a focused and appropriately supervised learning environment. In this regard, teachers, with the help of institutional academics, can play a key role. Teachers should design and develop e-Learning courses in such a way as to compensate for the lack of teacher physical presence. Hence, A. Muhammad et al. (2020) recommends that universities should adopt authentication and verification tools. There are many tools available in the market to monitor exams and monitor students' online activity to create a focused and supervised learning environment. For this reason, teachers can also play a major role in guiding students about the importance of ethics and academic integrity. In addition, general awareness programs should be organized regularly by institutions to promote academic integrity, in addition to the need for appropriate ethical policies and guidelines for academic institutions.

4. CONCLUSION

The existence of information and communication technology is currently growing very rapidly and can be used to support the implementation of distance learning and the learning process. Technology plays a role in streamlining the learning process and enabling it to run well during this pandemic. Thus, existing technology has various benefits and can be used not only for entertainment, but also for proper use of existing platforms and access to all learning content without stuttering about technology. Increasing integrity of information technology leads to the modification, dissemination and creation of information innovations that have not been carried out by telematics and education professionals. Both telematics and educators work independently, and e-learning is a critical necessity.

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