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How Flipped Classroom Helps the Learning in the Times of Covid-19 Era?

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Abstract

In 2020, online learning rapidly grows due to the pandemic of COVID-19 that affected the changes in global conditions. All learners and educators have to be ready for online learning. This research was aimed to explore the implementation of the flipped classroom during the Covid-19 pandemic outbreak in 2020. This research setting was at Universitas Negeri Jakarta, one of the campuses that eliminated campus activities due to the high Covid-19 spread in Jakarta. Referring to the learning standards of AECT, the researchers used qualitative descriptive methods. The techniques of collecting data were observation, interviews, and questionnaires to all students who took e-Learning Design courses at the Master of Educational Technology, Postgraduate Program, Universitas Negeri Jakarta. The research results proved that learning during the Covid-19 pandemic using flipped classrooms in the E-Learning Design course has met ten online learning standards by AECT and provides satisfaction for students and lecturers. In addition, according to research results, the use of technology does not need to be grandiose. Accordingly, it should optimize the platform often used on daily basis to utilize the flipped classroom.

Keywords: AECT standards, Covid-19, Educational Technology, Flipped Classroom

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INTRODUCTION

Educational technology exists because of the urge to solve learning problems. It makes the Educational Technology program at Universitas Negeri Jakarta (UNJ) has survived from Undergraduate, Master, to Doctoral programs. The background of the Postgraduate Program UNJ is to meet the community's needs and Educational Technology study program as one of the best study programs was established since 1978 because of that society's need. It is in line with the development of science and technology, which gradually shifts the orientation of education implementation and makes the Educational Technology study program continues to update learning materials to prepare educational practitioners capable of solving learning problems.

The e-Learning Design course is one of the courses carried out by the Educational Technology Master's Degree Program in 112th semester, March—July 2020. It coincided with the high number of Covid-19 sufferers and large-scale social restriction policies by the governor of DKI Jakarta. This decision also impacted the implementation of lectures at UNJ, which then eliminated learning activities on the campus.

As applied sciences whose focus on solving learning issues, the Educational Technology Master's Degree Program naturally changes learning patterns. It is one of the study programs combining face-to-face classes with in-class activity even before the pandemic era. During this pandemic era, even though there is an elimination of face-to-face learning, the lecturing implementation still relies on the internet network and optimize the other quadrant of learning setting. Educational technology believes that implementing online learning does not mean that the internet is only a mean to upload learning materials. Seeing the rapid grow of online education in the last decade, educational technology experts, who are united in Association for Educational Communications and Technology (AECT), formulate ten standards for distance and online learning (Piña, 2018). These ten standards can be used as a guidance when developing, implementing, and/or evaluating a learning process, so there is a maintenance of the online learning quality.

The rapid development of science and technology causes learning issues to continue to grow along with the shift in recent learning orientation which is more inclined towards online learning. Online learning continues as a solution to traditional learning problems. Furthermore, it has advantages and disadvantages. The blended learning model aims to facilitate learning by blending face-to-face learning and online learning. Staker and Horn (2012) stated that there are four categories of blended learning models as shown in figure 1.

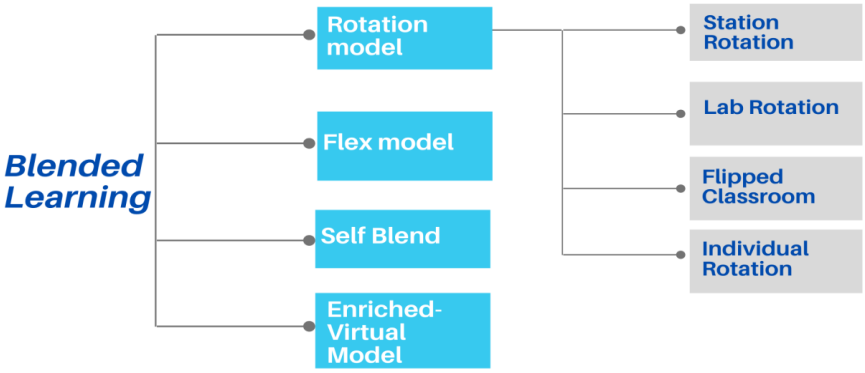

Figure 1. Model of *Blended Learning* (adapted from Staker & Horn, 2012)

The flipped classroom is one type of online learning that has developed in the last decade. Research related to flipped classrooms continues to evolve as learning opportunities that do not only rely on face to face. Some studies conducted tend to show positive results, such as learning outcomes, learning independence, motivation, and satisfaction with the experience of using a flipped classroom. In short, a flipped classroom is a learning strategy that changes learning patterns by providing video lectures related to basic knowledge of learning materials to be studied at home, and when at school, students can focus on deepening the material (Bergmann & Sams, 2012). It is in line with Herreid and Schiller (2013) that stated the class activities such as explaining the material, giving assignments, exercises, and assignments, changed into flipped online-based learning.

Learning in the classroom with the flipped classroom model will lead to more student-centered learning. Students' activities in the class will change into completing case studies, doing problem-based learning, practicing and collaborating between learners and learners, and finalizing the material studied at home (Cheng, Ritzhaupt, & Antonenko, 2019). Along with its development and implementation becomes more specific, it is not just at home doing activities usually done at school, and vice versa. Still,

it is more about learning by maximizing the learning space; there are both synchronous and asynchronous (Chaeruman, Wibawa, & Syahrial, 2020).

There are four quadrants of synchronous and asynchronous activities (Chaeruman et al., 2020). The first is live synchronous learning (LSL) or direct synchronous. Moreover, it is face-to-face learning in the classroom where learning activities are at the same time and space. The second is virtual synchronous learning (VSL) or virtual synchronous. In this quadrant, learning activities are at the same time, but in different places. Third, collaborative asynchronous learning (CAL) or collaborative asynchronous learning activities are at an unspecified time, can be anywhere and anytime. Still, in this learning quadrant, there is a collaboration of learners. Fourth, self-directed asynchronous learning (SAL) or asynchronous independently carry out the learning activities anywhere and anytime through the platform and using the materials provided. In this quadrant, there is optimal students' learning autonomy.

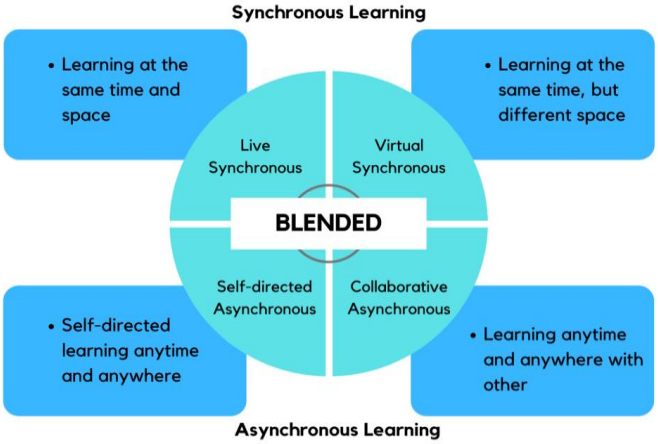

Figure 2. The Learning Quadrant in Flipped Classroom (Chaeruman et al., 2020)

For example, when the COVID-19 pandemic took place, it is impossible to conduct a face-to-face learning activity. Implementing a flipped classroom in such conditions will be more suitable since a flipped classroom is asynchronous and asynchronous combination class. Technically it will remain the same. The teachers give learners the materials for independent learning under their learning autonomy. Then, the students will have a face-to-face meeting with the teachers, followed by students' collaboration. The students' task does not disappear because the teachers continue to guide learning as a facilitator.

This research refers to ten standards in implementing online learning developed by AECT (Piña, 2018) and research on learning quadrants (Chaeruman et al., 2020). It aims to describe the implementation of learning in the e-Learning Design course during eliminating learning activities on campus due to the COVID-19 pandemic, so can provides input and better understanding for the next implementation of flipped classroom.

METHODS

The research conducted specifically in e-Learning Design course of the Educational Technology Master's Degree Program in 112th semester, which consisted of 16 students. The method used is a qualitative method to investigate an experience or event so that readers who do not experience the incident can understand (Ary, Jacobs,

Irvine, & Walker, 2010). The research did not conduct a hypothesis test, but it described flipped classrooms' implementation in the learning process in the Educational Technology Master's Degree Program.

In qualitative research, the researcher is a key instrument. Still, in the implementation of data collection, researchers use instruments to attach to the ten online learning standard rubric developed by AECT (Piña, 2018). The researcher collected the data through observation, interviews with lecturers and representatives of five students, and questionnaires distributed to all students who took e-Learning Design courses in the Educational Technology Master's Degree Program.

RESULTS & DISCUSSION

Results

The research subjects were 16 students in the e-Learning Design course class consisting of 6 men and 10 women. Each student is an individual whose majority have worked, 8 people work as teachers, 2 people work as training staff, and 6 people work in non-educational and training fields. The age range of students is 24-38 years and had various educational backgrounds. There are only 5 students who graduated with an Educational Technology degree. However, in terms of learning ability, all students tend to be homogeneous.

The research results section related to learning using flipped classrooms will be structured according to the ten learning standards by AECT.

Figure 3. Ten Standards of Online Learning by AECT (adapted from Piña, 2018)

Purpose - The learning objectives in this course are writing and documentation of a Semester Lesson Plan. At the beginning of the lecture, the lecturer discussed the RPS and agreed with the students. After reaching a mutual agreement, the lecturer shared RPS documents through the WhatsApp group. The learning objectives listed in this RPS document included what competencies students would have after attending lectures.

Assumptions - Building the assumptions in this course is through a question-and-answer process between lecturers and students. To make assumptions about the knowledge or experience students have regarding e-Learning Design, the lecturer asked what students know related to e-Learning Design. Students openly answered and stated what they had learned. Furthermore, the lecturer then built assumptions regarding access to the learning platforms such as Zoom, Google Classroom, Trello, and WhatsApp group.

There was no test conducted to obtain this data, but the lecturers and students communicated openly.

Sequence - There is an arrangement of material sequence in this course, which is based on considerations from the most general to the most specific. The Lesson Plan document listed the order of the learning materials. The students felt enthusiastic about joining the class after reading what materials they would study. When learning conducted, students could link the most general material to the most specific material. All students agreed that the order of the material given made it easier for them to study.

Activities - This course's class activities consisted of various types, including active learning through discussion, independent learning, question exercises, group assignments, and passive learning, such as watching videos and reading reference texts given by lecturers. Synchronous and asynchronous adapted to these diverse learning activities due to conditions based on the learning space. Because of the pandemic, there was a change regarding the learning activities that were initially planned with a flipped learning system and among them using face-to-face classes. The flipped classroom implementation was through optimizing the second, the third, and the fourth study spaces. Students seemed to be actively involved in the learning process. The lecturers also continuously controlled and provoked students to participate in learning activities, synchronously actively, and asynchronously.

Resources - The learning resources in this class are very varied. By utilizing Google Classroom, the lecturer shared links to various learning resources, both by design (exposure videos, presentation slides, and audio podcasts) to by utilization (Youtube videos and textbooks or journals). Lecturers also often use WhatsApp groups to share links or materials for student learning as prior knowledge before synchronous classes through Zoom.

Application - The knowledge application that students have acquired in this class was from the assignments, task practices, and discussion to study an example case. Students responded that they felt helped by these application models because even though they could not make field observations, the students could still make an analogy and apply what they had just learned into a practical context. As a tangible form of the in-depth student experience, lecturers assigned students to take an online course.

Assessment - There are two types of assessments in this course, formative and summative. There was no diagnostic test in this class, but the lecturer periodically assessed the learning activity process. In this assessment process, the lecturer actively provided feedback and allowed students to ask questions or repeat the previous materials. Students admitted that they felt much helped by this process. Although they could understand the materials, they would ask questions without any hesitation. The lecturer also openly gave responsive feedback. Students admitted that uploading instructional videos on the YouTube channel of teaching lecturers was very helpful if they wanted to repeat material that was still poorly understood.

Reflection - There was an honest reflection carried out between students and lecturers. After getting the values from the assessment process, the lecturer discussed the assessment process results and gave appreciation to each student. According to the lecturer, it would make students feel valued and build their confidence to learn. Based on students' admission, they stated that this reflection process made them feel comfortable to continue attending classes. They also did not hesitate to reveal what their obstacles were in learning.

Independent learning - The implementation of independent learning in this course is excellent. When providing learning materials, the lecturer provided various types of sources for the same material. For summarizing tasks, students were free to make it either in the form of a video, PowerPoint presentation, or infographic. Moreover, students

admitted that they felt satisfied to do independent learning based on their respective preferences. They also considered the RPS document given at the beginning of the lecture very helpful. It helped them find out about the material they would study even though they had not scheduled it yet.

Evaluation - There is a consideration to evaluate the learning objectives in this course. Lecturers gave assignments at the end of the course. It functioned as a system for applying the knowledge that students got. Additionally, Students admitted that the lecturer's final task was beneficial for them to use how to design online learning.

Discussion

In determining learning objectives, there should be a collaboration between the teachers and students by including core questions about what to achieve, how to resolve this achievement, and how to fulfill students' needs (Piña, 2018). The teachers need to convey what students will learn and what they will do during the learning process (Reidsema, Kavanagh, Hadgraft, & Smith, 2017). It is in line with the implementation of the E-learning Design course. Furthermore, Piña (2018) stated that assumptions play a role in determining learning objectives. The assumptions most often used are assumptions about students 'prior knowledge and students' ability to access learning material. Even though the E-Learning Design course does not hold a test to measure this, the lecturers and students communicate openly to build assumptions.

Flipped classroom-based learning is suitable for learning processes that involve teaching materials at the level of remembering and understanding the material that can be studied independently, and activity-based education to apply theory in the classroom (Lai & Hwang, 2016). In the flipped classroom context, there is a consideration related to the material needs to open opportunities for promoting learner autonomy and digital technology used in delivering material and conducting the evaluation. In the E-Learning Design class, the material's order is from the most general to the most specific according to complexity. Moreover, it also considers the class activities to carry out, both synchronously and asynchronously. Students study independently using text, audio documents, visual documents, audio-visual documents, animation, and simulations in the synchronous learning quadrant. In synchronous classes, the lecturer also facilitates discussion forums using the WhatsApp group. Whereas in the second quadrant synchronous class, the course was through Zoom. All classroom activities are under the relationship between learning experiences and learning quadrants by Chaeruman et al. (2020).

One of the characteristics of learning resources in online learning—including flipped classrooms—is learning resources to provide independent and multimodal learning opportunities while remaining easily accessible (Suparman, 2014). Implementing the E-Learning Design course has applied these principles and continuously makes two-way communication with students to find obstacles during the learning process. Learning resources provided by lecturers also open opportunities for students to read the material being studied in a concrete form of practical application.

Learning must consider assessment aspects and review its process to make the students acquire a complete understanding (Piña, 2018). Reidsema et al. (2017) stated that the function of assessment, among others, describes the condition of students' understanding, provides constructive feedback, and encourages learners to develop. Students who took the E-Learning Design course admitted that they had acquired complete knowledge by carrying out these stages. It is in line because students can carry out the final assignment compilation process in designing online learning. To perfect the assignment, the lecturer also gradually provided feedback to encourage students to reflect

and continue learning by correcting what is less than perfect. With an open communication process, the implementation of student-centered learning will be more optimal.

Effective learning designs enable independent learning at asynchronous times as a form of learning freedom. By implementing flipped classrooms, students have the opportunity to control their learning freely (Ng, 2015). There are opportunities for feedback, review, and reflection, oriented towards learning goals (Piña, 2018). The flipped classroom application provides opportunities for students' independent learning in the e-Learning Design course to develop.

Learning evaluation must be in line with the learning objectives (Piña, 2018). During the assessment, teachers and learners can also provide input on what needs to be changed, improved, and maintained (Waldrop & Bowdon, 2015). The e-Learning Design course in the Educational Technology Master's Degree Program is one of the learning processes that implement a flipped classroom, which refers to the standard AECT indicators. The results of this study may describe the implementation and provide a reference for the implementation of the next flipped classroom. Accordingly, learning is not just about uploading materials via the Internet, but about how to make students learn by taking advantage of the convenience of technology and optimizing the use of quadrant learning settings.

CONCLUSION

The pandemic seems to confirm that without face-to-face learning, learning can continue. It reminds us that learning can be done anywhere, at any time, using a variety of sources. Research has shown that the implementation of standard-based flipped classroom learning can be an effective learning solution without face-to-face classroom activities. The use of technology for online learning must also not be pretentious. The educators can optimize platforms often used in everyday life such as WhatsApp. The design and development of the learning process can be optimal. The importance of effective learning is learning that successfully transfers the knowledge. The research has described the implementation of flipped classrooms in the e-Learning Design course in the Educational Technology Master's Degree Program. The results of this study may serve as a reference for the implementation of flipped classroom learning, especially under pandemic conditions that open up the possibility that online learning will be permanently used as a new normal learning environment in Indonesia.

CONFLICT OF INTEREST

There is no conflict between the author, manager of the journal, and the place of research during the registration process, review, until publication.

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