

5. Constraint

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Constraints of Blended Learning Implementation in Higher Education

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Abstract

Blended learning is a combination of synchronous and asynchronous learning. Implementing blended learning in mathematics learning has some problems, one of which is the process of proving mathematics. This study aims to describe the obstacles to implementing blended learning in universities. The research was carried out at two universities in Indonesia located on the islands of Sumatra and Java. The subject of this research is the lecturer of the Mathematics Education Study Program at the two universities. The data collection technique used is an open questionnaire. The data were analyzed qualitatively and descriptively quantitatively. The study's results stated that lecturers faced many obstacles in implementing blended learning, mainly Internet, Time, Competence, and Student Personality.

Keywords: blended learning; problems; constraints

I. Introduction

The implementation of information and communication technology (ICT)-based learning has been seen for a long time before the Covid-19 pandemic. The Covid-19 pandemic at the beginning of 2020 prohibited crowds from reducing the spread of Covid-19, encouraging the acceleration of the implementation of ICT-based learning. In the end, learning is required to be carried out remotely, so ICT is needed, which in this case is the internet and its supporting applications. This condition occurs from elementary school to the university level.

Blended learning, which is widely applied during this pandemic, combines synchronous and asynchronous learning

(Chaeruman, 2018; Howard et al., 2006; Piskurich, 2015). According to Howard et al., (2006), synchronous learning occurs between students and educators simultaneously (face-to-face). Furthermore, Howard et al. (2006) define asynchronous learning as a learning process in which interactions between students and educators occur at any time and anywhere (not face-to-face).

According to Noviansyah (2018), the advantages of using blended learning are as follows: (1) time flexibility that makes students more flexible in studying learning materials; (2) unlimited communication space between educators and students; (3) educators can control student activities outside scheduled hours; (4)

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educators can maximize internet facilities to provide enrichment; (5) students can share knowledge; (6) the examination can be conducted effectively, and (7) educators can ask students to read the material provided before learning begins.

Apart from the benefits of blended learning, there are some obstacles faced by both lecturers and students. The main obstacle to the implementation of blended learning is the internet connection. This is in line with Atsani (2020) who stated that most research results highlight internet quotas and internet networks are the main obstacles. Another big obstacle is the focus of students who need to be more focused on education. Students prefer to use non-educational platforms such as online games rather than loose material given by the lecturer (Nisrinafatin, 2020). Another obstacle to implementing blended learning is technical constraints, such as operating the learning platform and motivating students (Wardani & Ayriza, 2020). The obstacles are not only focused on students, but lecturers as educators also find obstacles. As revealed by Qotrunnada and Khasanah (2021) educators still focus on curriculum completeness without considering and paying attention to changing conditions so that communication between educators and students becomes erroneous.

Based on the results of a literature review conducted by Maarop and Embi (2016), it was revealed that the challenges faced by educators in implementing blended learning were an increase in workload and time, a lack of pedagogical and technical skills to implement the program and difficulties in finding the right mix between face-to-face and online learning (Alebaikan & Troudi, 2010; Gedik et al., 2013; Heaney, 2012; Kenney & Newcombe, 2011; Levin et al., 2013; Lotrecchiano et al., 2013; Ramos et al., 2011). The study also found the importance of staff training, support, and networking as strategies to help instructors deal with these issues.

Implementing blended learning needs to be optimized by minimizing the obstacles faced. It is necessary to obtain information about the obstacles to implementing blended learning so

that solutions can be found to overcome the problems. There needs to be more research on the implementation constraints of blended learning. Most of what has been done are only related to online learning. For this reason, it is necessary to conduct comprehensive research on the obstacles to implementing blended learning, especially in universities. In addition, it is necessary to know more deeply whether the implementation of blended learning that has been carried out is following theoretical demands. The purpose of this research is to find out comprehensively the obstacles to implementing blended learning in universities.

II. Research Method

This descriptive study describes quantitatively and qualitatively the obstacles faced in implementing blended learning in higher education. The research subjects were 27 lecturers from two universities.

The data collection technique used is an open questionnaire. Questionnaires are used to obtain data related to the problems of implementing blended learning by lecturers. Questionnaire questions include "What are the obstacles that you experience: when delivering lecture material in direct offline learning mode (live synchronous), delivering lecture material in direct online learning mode (virtual synchronous), when delivering lecture material in indirect learning mode (asynchronous), in terms of achieving student competence related to effective courses, when responding to student responses, in evaluating student learning outcomes, in using applications (Learning Management System (LMS), and in using supporting applications (such as zoom, google meet, Webex, etc.). The questions in the test refer to the components of blended learning implementation, which are vital in formulating the constraints of blended learning implementation.

The data analysis technique was carried out in the following stages: coding the answers given by each respondent for each question, the corresponding codes were grouped, and codes that did not have a group or unusual answers were

grouped into other codes. Then the percentage of each code is calculated.

The conclusion of each question is formulated based on the three highest code groups and is described by explaining the variety of respondents' answers. The overall conclusion is based on the questions and respondents' answers.

III. Results and Discussion

The answers to the questions given to 27 respondents varied widely. Questions related to the obstacles experienced by respondents in delivering lecture material in direct offline learning mode (live synchronous) were answered by respondents in various ways. The grouping of respondents' answers is presented in Table 1.

Table 1.
Obstacles in delivering materials live synchronous

Constraint	Amount
Limited space and time	15%
Signal	18,5%
Atmosphere and Facilities	3,5%
Difficult to rate process	3,5%
Human Resources	7,5%
Others	7,5%
None	44,5%

The obstacles experienced when delivering lecture material in direct online learning mode (virtual synchronous) are also quite diverse, as presented in Table 2.

Table 2.
Obstacles in delivering materials virtually synchronous

Constraint	Amount
Focus on students	11,5%
Teaching	7,5%
Signals and Technical	77,5%
Others	3,5%

The obstacles experienced when delivering lecture material on the indirect (asynchronous) learning model are presented in Table 3.

Table 3.
Obstacles in delivering material asynchronously

Constraint	Amount
Different Understanding	3,5%
Focus on students	11,5%
Material Limitations	3,5%
Less Active Students	19%
Students Difficult to Access	3,5%
Material not read	7,5%
Undisciplined	3,5%
Others	7,5%
None	40,5%

Constraints experienced in terms of achieving student competence related to effective courses are presented in Table 4.

Table 4.
Obstacles in achieving student competence

Constraint	Amount
Focus on students	15%
Independence	3,5%
Limited time	7,5%
Content understanding	15%
Capability difference	3,5%
Low level of motivation	22%
Facilities and equipment	3,5%
Others	11%
None	19%

The obstacles in responding to the responses/questions given by students are presented in Table 5.

Table 5.
Obstacles in responding to student responses/questions

Constraint	Amount
Interaction	7,5%
Students difficult to deliver ideas	3,5%
Students' understanding	3,5%
Signals and Technical	11%
Time	15%
Others	10,5%
None	49%

In terms of evaluating learning outcomes, the obstacles experienced are presented in Table 6.

Table 6.
Obstacles in evaluating learning outcomes

Constraint	Amount
Honesty	26%
Signals	7,5%
Unachieved competence	3,5%
Time	3,5%
Assessment	11,5%
Others	14%
None	34%

The obstacles experienced in using LMS applications are presented in Table 7.

Table 7.
About obstacles using LMS

Constraint	Amount
Platform confusing-use	7,5%
Signals and Technical	30,5%
Others	3,5%
None	58,5%

The obstacles experienced in using supporting applications are grouped as presented in Table 8.

Table 8.
Constraints to using supporting applications

Constraint	Amount
Platform confusing-use	3,5%
Internet quota	3,5%
Signals and Technical	49%
Others	3,5%
None	40,5%

The live synchronous constraints expressed by respondents appear diverse, as presented in Table 1. However, most stated that there were no obstacles to direct learning. From the diversity of obstacles expressed by respondents, they stated that the obstacles were signals. This shows that there needs to be a better understanding of respondents with this live synchronous. The constraints expressed by other respondents can be described only as the limitations of space and time. This study's findings align with the results of a study conducted by Maarop & Embi (2016).

In implementing virtual synchronous, which can be interpreted as face-to-face meetings that occur online, the most dominant obstacle expressed is the difficulty in focusing on students. Other difficulties include explaining the material to students (teaching) and signal problems. Signal constraint is a constraint that appears expressed by respondents in almost all questions. This is also in line with the results of studies conducted by Alebaikan & Troudi (2010); Gedik et al., (2013); Heaney (2012); Kenney & Newcombe (2011); Levin et al. (2013); Lotrecchiano et al. (2013); and Ramos et al. (2011).

For the indirect (asynchronous) learning mode, the obstacles faced are less active students, including students who do not read the lecture material given in learning, and difficulty focusing on students. However, of all respondents, as much as 37% stated that there were no obstacles.

In order to achieve student competence in the learning process, the obstacles faced are almost the same as the obstacles in implementing asynchronous mode, namely the difficulty in focusing students in learning. Focusing on students here is the difficulty in understanding the material provided. This finding is in line with Isnayni & Hermansyah (2020), who revealed that the failure to achieve competence was caused by students' difficulty understanding the material provided online. This finding differs from the research results (Sari & Rodliyah, 2020), which state that blended learning helps students meet their learning needs. Meanwhile, other obstacles can be grouped with low learning motivation. This is in line with what Wardani & Ayriza (2020) said. The motivation here also includes independent learning and active learning. This finding is also different from the research results (Astuti & Febrian, 2019), which state that students can learn independently as long as there are clear instructions. The discrepancy between the results of this study provides an opportunity for further research. However, many respondents also stated that there were no obstacles, as many as 19% of respondents.

There are no obstacles in providing

feedback to the responses or questions expressed by students, although there are a few constraints. The problem is the time in responding. For the implementation of the evaluation, most respondents stated that there were no obstacles, as many as 34% of respondents. Meanwhile, the obstacle faced was the difficulty in measuring student honesty.

Regarding the use of LMS and supporting applications, most respondents stated that there were no obstacles, as many as 58.5% stated that there were no obstacles to the use of LMS, and 40.5% stated that there were no obstacles in using supporting applications. Meanwhile, the constraints can be broadly stated in technical terms such as signals.

From the eight questions posed to the respondents, various obstacles were seen, ranging from technical obstacles to obstacles encountered from within the students. Constraints experienced are related to the internet, time, competence, and student personality. Internet constraints include poor signals, no quota for students, and a need for more facilities for implementing learning, especially for asynchronous activities. This obstacle plays a significant role in implementing blended learning and can hinder learning success (Nurmukhametov et al., 2015).

The other obstacle is related to time, where this obstacle occurs when life is synchronous and asynchronous, especially when responding to questions expressed by students and when carrying out evaluations. The time required for the implementation of blended learning is quite a lot. Meanwhile, the obstacles to achieving competence occur at asynchronous and virtual synchronous times. Students' personalities are constrained at synchronous and asynchronous times, including discipline, independence, motivation, and honesty.

IV. Conclusion

Constraints faced when implementing blended learning in universities are grouped into four: obstacles in terms of the internet, which include poor signals and limited quotas, time constraints in giving feedback to student

questions/responses when asynchronous, which cannot be directly given. Obstacles in achieving student competence who need help understanding the material and obstacles related to student personality include honesty, independence, learning motivation, and discipline.

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