

**ONLINE LEARNING OBSTACLES FOR MATHEMATICS EDUCATION
STUDENTS DURING PANDEMIC**

**Nilza Humaira Salsabila, Ulfa Lu'luilmaknun,
Tabita Wahyu Triutami, Nourma Pramestie Wulandari**
Pendidikan Matematika, FKIP, Universitas Mataram
nilza_hs@unram.ac.id

Abstrak

Tujuan dari penelitian ini adalah untuk memaparkan bagaimana kendala yang dialami mahasiswa pendidikan matematika melalui pembelajaran daring pada masa pandemi. Penelitian ini merupakan penelitian deskriptif. Responden pada penelitian ini adalah mahasiswa pendidikan matematika Universitas Mataram yang berjumlah 126 orang. Data pada penelitian ini diperoleh melalui angket dan dianalisis secara statistik deskriptif. Hasil penelitian menunjukkan bahwa sebagian besar kendala yang dialami mahasiswa dari segi jaringan internet dan perangkat yang tidak memadai. Selain itu, mahasiswa juga mengalami kesulitan dalam memahami materi perkuliahan secara daring dan merasa motivasi maupun minat belajar mereka menurun selama masa pandemi.

Kata kunci: Pandemi, Pembelajaran Daring, Pendidikan Matematika

Abstract

The aim of this research is to explain how the obstacles experienced by mathematics education students through online learning during the pandemic. This research is descriptive research. Respondents in this research were students of mathematics education at the University of Mataram, amounting to 126 people. The data in this research were obtained through a questionnaire and analyzed by descriptive statistics. The results showed that most of the obstacles experienced by students were in terms of internet networks and inadequate devices. In addition, students also have difficulty understanding lecture material online and feel that their motivation and interest in learning has decreased during the pandemic.

Keywords: Mathematics Education, Online Learning, Pandemic

INTRODUCTION

The Corona virus or commonly called Covid-19 (Corona Virus Disease 2019) was first reported in Wuhan, China (Lee, 2020). This virus became a pandemic and spread to all parts of the world, including Indonesia. All sectors of life are affected by this disease, one of which is the education sector. In order to break the chain of spread of Covid-19, social distancing is enforced. Then the government implemented a policy of all universities

implementing online learning to avoid crowds. This is based on the Joint Decree of the Four Ministers Number 01/KB/2020 dated June 15, 2020 regarding Guidelines for the Implementation of Learning in the 2020/2021 Academic Year and the 2020/2021 Academic Year during the Corona Virus Disease (COVID-19) Pandemic Period.

Online learning is a solution so that learning activities can still be carried out. Online learning is distance learning in which the delivery of teaching materials and their interactions is carried out with the intermediary of internet technology (Ministry of Education and Culture of the Republic of Indonesia, 2020). According to Windhiyana (2020) online learning is a learning which is carried out by utilizing an internet connection so that communication is established without any physical contact between educators and students. Online learning has several advantages, including learning resources that can be accessed easily via the internet, learning can be anywhere and anytime, and students can study independently, and can be more cost-effective because they do not use paper and stationery (Nur, 2020).

Mathematics learning at the university level is increasingly abstract and the level of difficulty is higher. Mathematics is a discipline that studies abstract systems formed by abstract elements and these elements cannot be described in a concrete way (Annurwanda & Friantini, 2019). Through online learning sometimes it will be more difficult to teach mathematics to students. This causes students to have difficulty understanding the material presented when learning is carried out online. Yulia and Putra (2020) suggest that online learning can hinder students' mathematical reasoning abilities in the learning process due to the lack of interaction between educators and students.

Furthermore, in online learning there are other obstacles. Constraints that can occur can be from aspects of technology, internet, facilities, and others. Network or internet problems can occur due to regional differences (Alania & Sungkono, 2021). This is similar to the research conducted by Kusumaningrum and Wijayanto (2020). Students also feel bored because they are only in front of a cellphone or laptop during learning (Pujiasih, 2021). Limitations in using technology can also be an obstacle in online learning (Yana & Maharani, 2020).

Lectures at the Mathematics Education Study Program, University of Mataram have also adapted by implementing online learning. Therefore, the purpose of this study is

to describe how the learning obstacles of mathematics education students during online learning during the Covid-19 pandemic along with related findings.

METHOD

This research is a descriptive research with qualitative approach. This research was conducted at the Mathematics Education Study Program, University of Mataram with the research subjects being mathematics education students in semester 1, 3, 5, and 7. The students were 126 students, with details of 30 males and 96 females from 59 semester 1 students, 19 semester 3 students, 18 semester 5 students, and 30 semester 7 students. In this study, the subject was taken using convenience sampling technique.

The data in this research were collected using a non-test technique through online questionnaires related to the problems faced by mathematics education students during online learning during the pandemic. The questionnaire contains the first three questions which are closed questions, while the next two questions are open questions. Question number one is what media or applications students use during a pandemic; question number two is what are the students' obstacles when studying online; question number three students choose several options according to the student's condition; question number four is related to the problems faced by mathematics education students regarding online learning on more specific media/applications; and question number five about advantages of online learning.

The data obtained from the questionnaire was then analyzed by descriptive statistical methods. The data obtained from closed questions numbers one to three are made in the form of a percentage and then described. Furthermore, the data on open questions number four and five are reduced first so that several related conclusions can be drawn.

RESULTS AND DISCUSSION

Results

The results of data processing regarding the obstacles of mathematics education students in online learning are as follows. Question number one contains questions related to any application or media that students have used while studying online. The table below shows the results.

Table 1
Online Learning Media Used by Students

Media	Total	Percentage (%)
LMS Universitas Mataram	124	98,41
<i>Google Classroom</i>	78	61,90
<i>WhatsApp</i>	117	92,86
<i>Youtube</i>	28	22,22
<i>Zoom Cloud Meeting</i>	89	70,63
<i>Google Meeting</i>	106	84,13
BBB	51	40,48
Audio Learning	9	7,14
Video Learning	15	11,90
<i>Kahoot!</i>	2	1,59
<i>Quizizz</i>	6	4,76
<i>Jitsi Meet</i>	1	0,79
<i>Telegram</i>	1	0,79

The second question is "What are the obstacles for students when studying online?". The following are some of the obstacles faced by mathematics education students based on the results of the questionnaire.

Table 2
Obstacles to Student Online Learning

Obstacle	Total	Percentage (%)
Internet Quota Limitations	93	73,81
Internet Signal Interference	99	78,57
Insufficient Device (Laptop/HP)	27	21,43
Other	10	7,94

Questions in the next questionnaire, students choose several options that are suitable for students' conditions during online learning to dig deeper into student obstacles. Here are student answers.

Table 3
Student Conditions during Online Learning

Kondisi	Total	Percentage (%)
I have difficulty understanding the material because of online learning	107	84,92
I feel my interest in learning is reduced because of online learning	71	56,35
I feel my motivation to study is reduced because of online learning	57	45,24
I didn't get satisfactory feedback because I studied online	72	57,14
Not all	5	3,97
Other	7	5,56

The questions in the next questionnaire are open questions regarding the problems faced by mathematics education students regarding online learning on more specific media/applications. Some media such as LMS Unram which is often used by Mataram University students, Google Classroom, WhatsApp, Youtube, Zoom Cloud Meeting, Google Meeting, and other video conference media. Here are the data obtained.

Table 4
Obstacles of Students' Online Learning in Certain Media

Obstacles Using			
LMS Unram/GC	WhatsApp	Youtube	Zoom, GMeet etc
1. Sometimes error, cannot be accessed	1. Information sinks with another message	1. Drain quota	1. Sometimes error
2. Upload a task that is limited in size	2. Do not understand the material explained via WhatsApp	2. The material presented is not interesting	2. Network problems and HP Camera quality
3. Two-way communication is not optimal	3. Signal problem, long message sent	3. Less interactive	3. Quota runs out fast

In addition, students were also asked about the advantages of online learning. Student responses include flexibility in time and place and practical efficiency, students can repeat lecture recordings, save on transportation costs, use technology (students can get to know some of the latest technology features), increase learning independence, be more relaxed, the learning process is more systematic and clear.

Discussion

Based on Table 1 above, it can be seen that the majority of online learning activities for mathematics education students at the University of Mataram use the Learning Management System from the University of Mataram and utilize the WhatsApp application. One of them is in the Abstract Algebra course, active learning can be done (Apsari, Sripatmi, Sariyasa, Maulyda, & Salsabila, 2020). The results of Hutauruk and Sidabutar (2020) research also show that Google Classroom, Whatsapp, and Zoom Cloud Meeting media are used in online learning for mathematics education students.

Then the data from the second question, based on Table 2, the obstacles experienced by students above are basic problems that are commonly encountered when

learning online. Previous research also revealed similar things, such as problems with the internet network (Hutauruk & Sidabutar, 2020). Research conducted by Syarifuddin, Basri, Ilham, and Fauziah (2021) found obstacles in online learning related to internet packages or wifi networks and poor networks in the student environment. And the devices owned by students also cannot accommodate online lectures properly. This is due to student economic factors.

Furthermore, Table 3 represents that online learning has an influence on the cognitive, affective, and skills aspects of students. Most of the students could not accept the material given by the lecturer well. In addition, student interest and motivation to learn also decreased due to learning conditions. Only 5 students did not experience the conditions mentioned above.

Research conducted by Putri dan Munandar (2021) also revealed the same thing, one of the obstacles to online learning is that students have difficulty understanding learning materials. Then the research findings of Badjeber (2020) that more than half of students are still not good in terms of intrinsic motivation during the online learning period.

There are several different obstacles faced by students through various media/applications that are used during online learning shown in Table 4. On LMS Unram or Google Classroom media and Youtube students feel that interactive communication is not optimal. Students' internet quota also runs out quickly on certain media that consume large amounts of internet quota.

Afterward, through question number 5, it can be seen that some of the advantages of online learning were found by students. One of the advantages of online learning using the WhatsApp application is that the communication occurs directly and interactively, besides that this application facilitates sending messages in the form of text, sound, images, and videos (Apsari et al., 2020). Then, the use of technology such as Google Meeting has a function that is almost similar to Zoom Cloud Meeting, which is to accommodate face-to-face learning online (Anggraini & Mahmudi, 2021).

CONCLUSION

There are many obstacles faced by mathematics education students, in general the constraints experienced by quotas and inadequate internet networks. In addition, the devices owned by students do not support the effectiveness of online learning. Not only

that, online learning also affects the delivery of material that is not optimal and students' interest and motivation to learn. There are several advantages of online learning that are felt by students, including flexibility, students can re-listen to recorded material, etc.

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