

Students Perceptions of Mathematics Education on Online Learning at STKIP Tunas Palapa Central Lampung

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Abstract

The Covid-19 pandemic has brought major changes to the world, including in the field of education. In an effort to contain the spread of Covid-19, the Ministry of Education, Culture, Research, and Technology has made a policy regarding the online teaching and learning process. The article aimed to determine student perceptions of online learning during the Covid-19 pandemic. This research used a quantitative descriptive analysis method with research instruments in the form of questionnaires distributed online by using google forms. The number of samples in this study were 40 students of the Mathematics Education Study Program at STKIP Tunas Palapa that has been involved online learning during the Covid-19 pandemic. The results show that the majority of students agree more with offline learning in face-to-face classes than online learning. Constraints faced during online lectures make students want to renew the education system for the next lecture. The government needs to ensure the availability of adequate internet network access in all regions and campuses provide subsidized internet quota b for students. So that lecture activities going well and as expected for the learning process.

Keywords: Students' Perceptions, Mathematics Education, Online Learning

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INTRODUCTION

Covid-19 pandemic has brought major changes to the world, including Indonesia. The Corona Virus Disease (COVID-19) pandemic has caused the learning system to change from face-to-face/out-of-network learning to online learning. implemented in order to break the chain of spread of COVID-19, especially in the world of education as stated in the Circular of the Minister of Education and Culture Number 3 of 2020 concerning Prevention of Corona Virus Disease (COVID-19) in Education Units. Online learning system during the Covid-19 period Sahbaz (2020) previously stated that the terms distance or online learning/teaching have been used to describe the kind of education in which students do not have to physically attend the school premises, but instead conduct their studies from elsewhere using a computer or other technological device. According to Pujiastutik (2019) online learning is defined as learning that uses ICT to transform the learning process between educators and students (Hayati, 2022; Dewi, Utami, Suhono, 2022). In the application of online learning, lecturers and students have their respective roles. Lecturers as communicators and facilitators have the task of guiding and directing students in

learning in order to obtain maximum understanding and results from teaching and learning activities using online media, while students act as independent learners based on online media.

Basically, the online learning system, which can be called online lectures, requires more responsibility, independence and personal perseverance from the students themselves, because no one controls them other than themselves. The application of online lectures makes students independent learners. Students find online lectures more flexible. Because it allows learning interactions anywhere and anytime. This statement is supported by Giorgio (2020) Online educational platforms also enable these students to learn at their own pace by independence and this gives them more flexibility during the day. On the other hand, these advantages are less likely to hold for dependent learners. Starting from understanding the material, looking for other reference sources related to lecture material, even independent assignments require perseverance in their completion, making students more active when lecturing online.

Online learning is actually included in the concept of 21st Century Education. The concept of 21st century education suggests lecturers to improve the quality of teaching lecturers to ensure their students meet the skills requirements of the 21st century. 21st century learning is marked by the ability of students to develop skills using technology. Online learning provides a challenge for students and lecturers to improve technology skills. In addition to technological abilities, Famularsih (2020) explained from the results of his research It can be seen from the data that students agreed that their reading and writing skills are improved through online learning. It can be concluded that some students' abilities have increased with online learning. Online learning has an impact on both parties, both lecturers and students. For students, online learning has emerged as an alternative method of learning that does not require them to be present in class during lectures (Sari, et al., 2021). In addition, students are more skilled in using technology applications and this results in increased knowledge of the latest technology. For lecturers, online learning methods are here to change conventional teaching styles which will indirectly have an impact on work professionalism. In line with this, Alchamdani (2020) explains that Mastery of the media of online learning by students and lecturers is very necessary to facilitate the learning process. Mastery of media that is better able to support learning activities running smoothly and according to the objectives. Some media/applications that can be used to help the online learning process include: Zoom, Goglemeet, WhatsApp, Youtube, google classroom, etc.

The implementation of online learning needs to be studied more deeply by looking at students' perceptions of the online learning process, so that it can be seen what form of online learning students want in the following year. The purpose of this study was to examine student perceptions of the online learning model applied to STKIP Tunas Palapa students, Central Lampung.

METHODS

This study used a quantitative descriptive method. The data collection technique used was through filling out online questionnaires via Google forms and online interviews were also conducted through Whatsapp conversations. The research sample was determined using purposive sampling technique. Purposive sampling technique is a technique used to determine the research sample through certain considerations. However, the researcher must consider that the sample taken is representative of the subject as a whole. According to Arikunto, samples in a study can be taken 10-15% of the population, if the population is more than 100 people. However, if the research population is less than 100 then the sample taken is entirely. The population in this study were all mathematics education students who were actively participating in online lectures. The total population is 120 students, of which 40 students were taken as research samples. And from the 40 existing

samples, 15 students were taken to conduct interviews as a reinforcement of the results of the questionnaire. The number of samples includes 5 respondents who are students of class 2018, 10 respondents from 2019 and 25 respondents from 2020. Quantitative data obtained from the results of the questionnaire collected in this study were analyzed using descriptive analysis. Meanwhile, the data obtained from the interviews are described in a pattern and can be used as a complement to the results of the questionnaire. Data collection methods including targets, methods, instruments and research subjects can be seen in table 1.

Table 1. Research

Target	Method	Instruments	Subjects
Responses	Questionnaire	Google Form	Student
Students to learning during pandemic covid-19		Link to https://forms.gle/BJa8F8s-qRiDiFQVN8	

Data analysis of student responses to online learning during the covid-19 pandemic. The analysis process carried out is as follows: collecting and compiling student responses through questionnaires conducted online via the google form link. The next step is to calculate and classify each item of the questionnaire with willing respondents. Furthermore, it is concluded with classical calculations from the sample, which will then produce findings from student responses through the questionnaire.

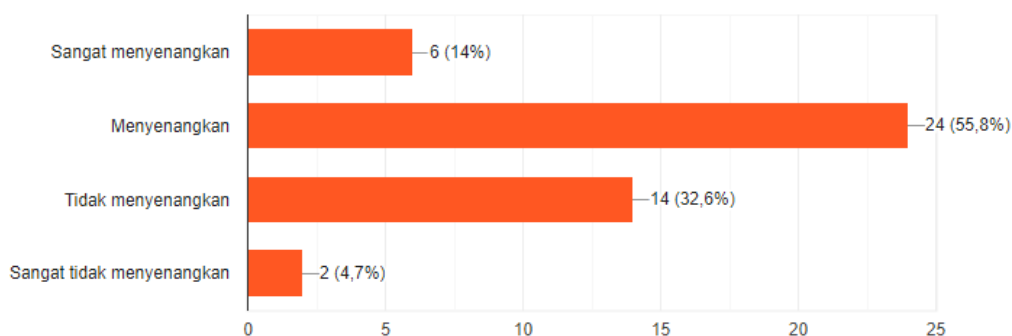
RESULTS AND DISCUSSION

All students who filled out the questionnaire stated that 100% had carried out online learning in the odd semester of the 2020/2021 academic year. This shows that all lecturers and students follow the policy of the Government in general and the policy of the University in particular which stipulates that during the Covid 19 pandemic, learning is carried out online. Based on the results of a survey through filling out online questionnaires, it was found:

The impression of students taking online lectures

The majority of students as many as 55.8% stated that online lectures were fun. That's because lectures can be done anywhere, from home, work, bale banjar, internet cafes or boarding houses, as well as the office where they work. Thus, they do not need to come to campus to attend lectures, besides that they also have a lot of free time with their families and in order to protect themselves from the Covid-19 pandemic, online learning is fun.

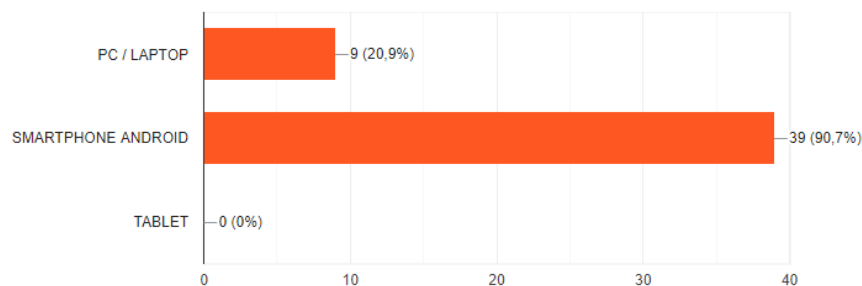
Diagram 1. The impression of attending lectures online



1. The devices used in online learning

Online lectures Smartphones dominate up to 90.7% during online lectures. This is quite worrying, besides the android screen size is not too large to present material and has an impact on concentration problems if you open the android screen for too long.

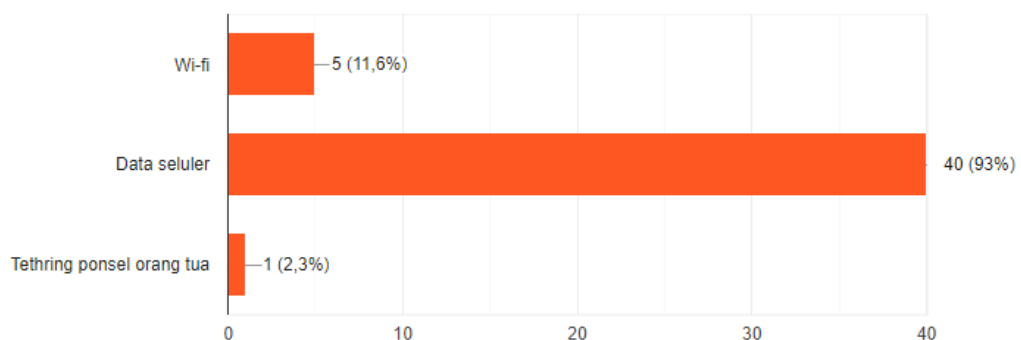
Diagram 2. The use of device during learning process



2. During online lectures Internet networks used during online lectures

From the diagram we can see that students dominate the use of cellular data to take online lectures. This is because cellular data is easier to obtain on every cellular in the area where they live. Students can choose mobile data from the cheapest and with a good connection according to them. The use of cellular data packages can make students connect to the internet whenever and wherever they want so that it is more flexible than wifi.

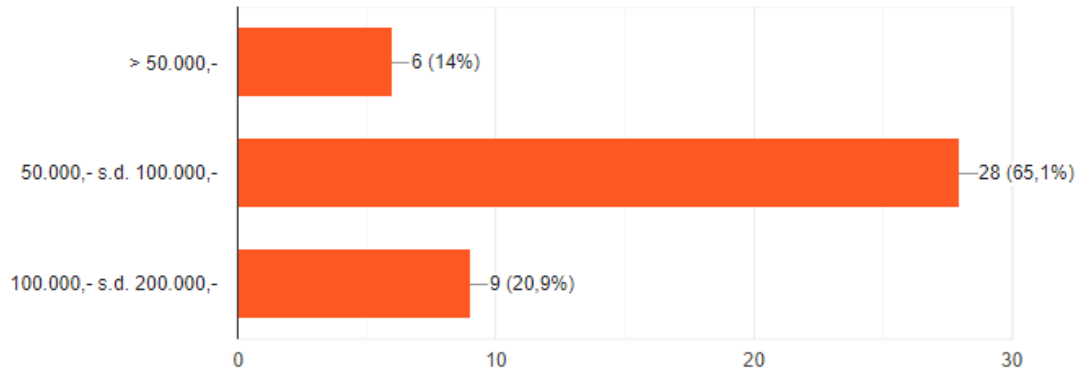
Diagram 3. Internet network used while online



3. Amount of expenditure for purchasing internet quota per month

The largest percentage of student spending for purchasing cellular quota per month is 65.1%. The average purchase of internet quota to attend online lectures is IDR 100,000 – 200,000.00. The nominal is quite large for the student category considering that they do not work. However, for some of the extension class students, this nominal usage may be a reasonable category because they are already able to make money for themselves. Students stated that online learning requires students to be active on the internet by buying internet quota more often. This causes their expenses to increase.

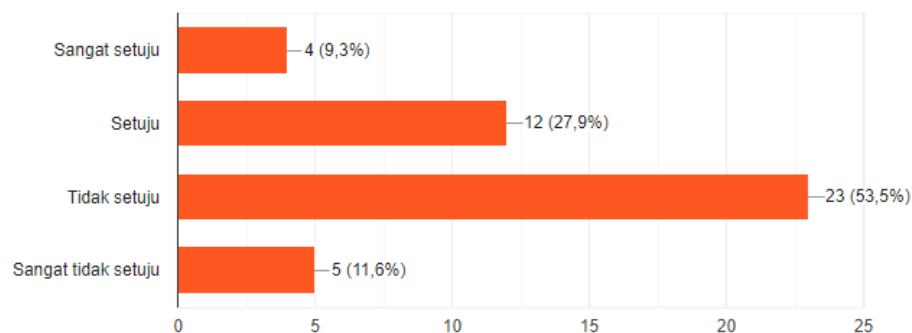
Diagram 4. Nominal purchase of monthly quota for students



4. Interaction with lecturers during online lectures

Respondents gave the option of disagreeing as much as 53.5%. They assume that during online lectures, communication with lecturers is limited to online only. They are used to face-to-face and make it easier for them to ask questions about material that has not been understood. In addition, the cause of interaction with lecturers was more difficult because most students were not used to asking questions in written form. The online lecture method is not effective because students are not free to ask questions to the lecturer. Basically, in a learning process, it is very necessary to have positive communication and interaction to raise the spirit of learning, so that maximum learning outcomes can be achieved.

Diagram 5. Interaction with lecturers during online lectures

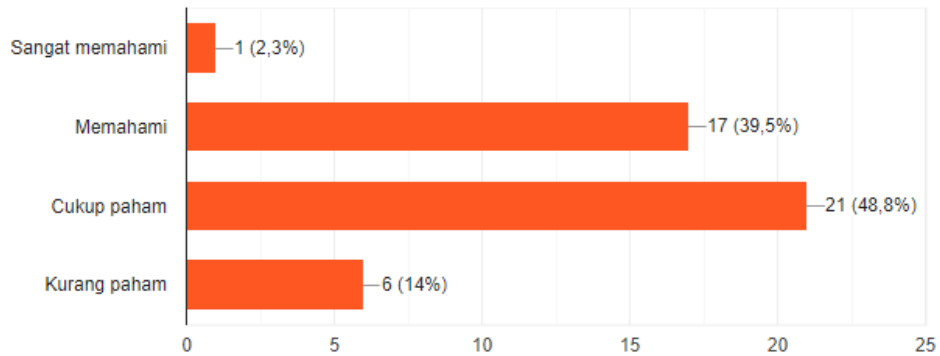


5. Understanding of material during online lectures

The percentage of understanding the material is 48.8%, which is the category of understanding enough. The majority of students stated that they understood what the lecturer said during the lecture. This is certainly a learning evaluation material for Lecturers at STKIP Tunas Palapa, considering that the understanding of the material presented cannot be maximally captured by students. On the other hand, the lecturers still provide answers to questions and respond to student questions briefly and at an undetermined time even though the learning is not done face-to-

face. So as students, they are required to be independent to browse the material through guidebooks, modules, other references via the internet or sharing online with other students in class. Changes in learning patterns that were originally face-to-face then turned into online learning patterns require adaptation that is not easy. For students who tend to find it difficult to understand the material during face-to-face learning, online learning is increasingly difficult to apply in their daily lives. It takes time for students to get used to this kind of learning pattern.

Diagram 6 Understanding of material during online lectures

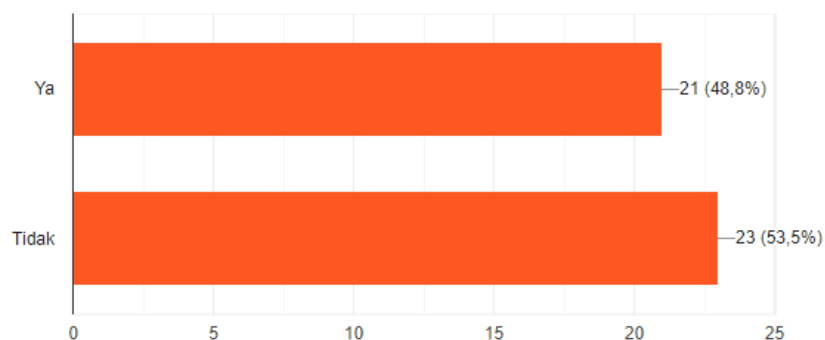


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6. Giving assignments during online lectures

Giving assignments is a form of interaction between lecturers and students. How the understanding of the material that has been given can be seen through the results of students working on these tasks. The student's perception of the tasks given during online learning is that students feel they cannot do the task well (53.5%). This is because during online learning the discussion of sample questions is very limited, even if they are in the form of modules or notes from lecturers, which requires more effort to understand them. Communication with lecturers is also limited considering the delivery of material through online applications, so for tasks that tend to be difficult, students are confused about completing them. In addition, there are assignments between one lecturer and another lecturer at the same time, so that students receive many assignments in one day, causing a very short work time. The negative perception of this assignment is one of the obstacles in the interaction pattern during online lectures. However, on the other hand, students stated that giving assignments is part of the responsibility of students to train the extent to which they understand the material that the lecturer has given. This is what makes some students do not find it difficult to do assignments from the lecturer. Students should be able to complete assignments on time, in order to test their knowledge so that each student is able to develop the ability to evaluate themselves.

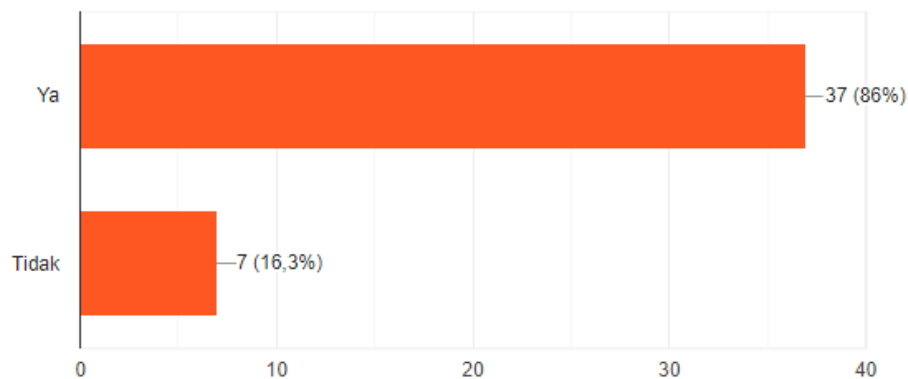
Diagram 7. Giving assignments during online lectures



7. Independence in studying lecture material

Respondent data shows 86% of students think "YES" because to understand the material in online lectures, students cannot understand just by accepting what the lecturer says, they can get learning materials from various reference source by utilizing the android owned. One of the positive impacts of online learners is having the ability to learn independently because in the learning process, students will seek, find and conclude from what they learn independently. Independent learning is a staged process where students are directly involved in identifying difficult materials. Independent learning becomes meaningful. In independent learning, students must be able to think critically, and solve problems, and have the skills to develop their own abilities. Finally, students explore their potential and develop an independent attitude in solving problems/tasks they get during online lectures.

Diagram 8. Independence in studying lecture materials

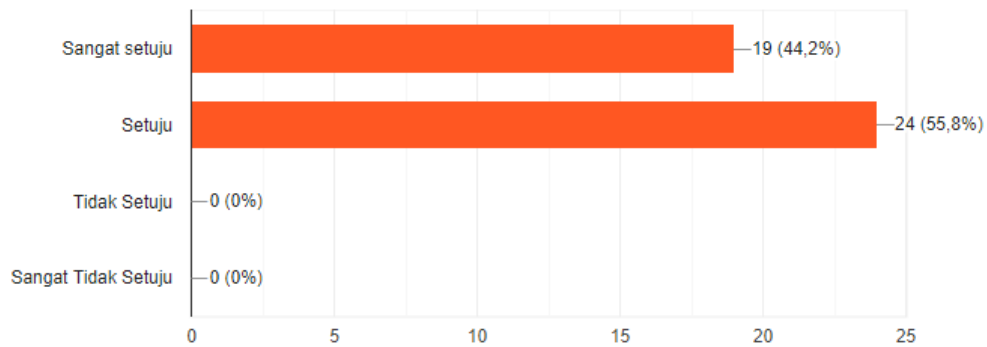


8. The use of online media/applications during online lectures

Technological sophistication is increasingly prevalent this year. Almost all activities take advantage of technological sophistication ranging from work from home, online learning, office workers, and even online shops. Students think that one of the benefits of the online learning model is that it can increase their knowledge in the use of online media/applications such as zoom, google meet, quizziz, google classroom and many more. The data states that 55.8% of students agree that online lectures make students accustomed to technological advances. Other respondents stated that they strongly agree that online lectures are useful in increasing their knowledge in the field of technology. All respondents directly agreed with the advantages of online lectures. This is also supported by the results of Giatman's research (2020) However, almost all respondents still believe face-to-face learning is much better and preferable to online learning, it is proven that 94.4% still want face-to-face learning.

Students exchange information and lecture materials more easily with online media. Because the online media/applications that students use have just been implemented, it makes students eager to carry out online lectures. At the beginning of the lecture, students were enthusiastic about using this online media/application. Sharing knowledge about the material can also be done with this media. Sharing no longer has to be face-to-face, but can be through video calls or sending files to each other for lecture materials.

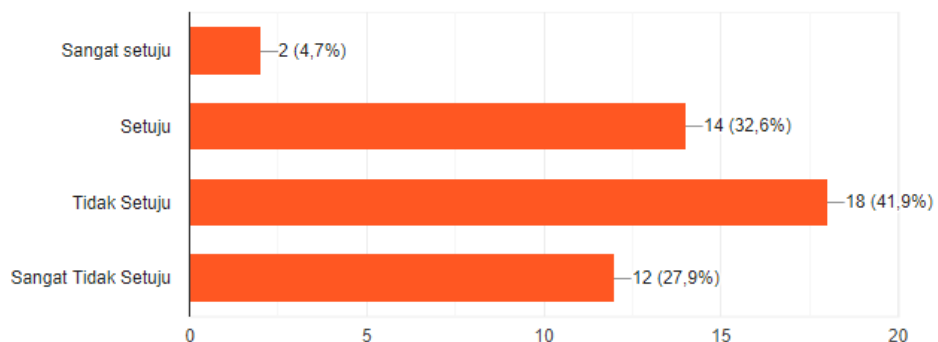
Diagram 9. Use of online media/applications



9. Responses to future online lectures

Based on the calculation results 41.9% of students do not agree if online lectures are held in the future or in the future. Some students commented that lectures that required calculations and practice were difficult to understand if conducted online. They feel much more comfortable in interacting, there is direct eye contact, the other person's body movements indicate that 2 (two) way communication is running smoothly. Because if they don't understand some of the material, they can directly ask the lecturer concerned. One consequence of the application of online learning methods is that not all students are able to understand the material that has been given independently, especially for students who tend to be passive. Data of 4.7% stated that they strongly agreed if future lectures were held online. Students who agree that lectures are held online are usually students who have other activities, because some of our students are already working and this causes their activities to be more crowded than other students. So that online learning helps them to continue to gain knowledge in lectures on the sidelines of their work.

Diagram 10. Responses to online lectures in the future



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The data from a student perspective are deemed ineffective and need to improve the lecture system. This can be seen from:

- 1) Lack of understanding of the material presented because it is not face to face. Learning will be more meaningful for students if it is held in person or face to face. Likewise, direct communication is much more effective than communication with

electronic media. When communicating in written language, one often faces miscommunication. Therefore, many students do not understand the material presented by the lecturer during online lectures. In addition, they also have the ability to think that is different from one another. With direct communication they feel much more comfortable compared to online communication because they can interact / share directly both with lecturers and with colleagues. The results of Rosali's research (2020) state that students have difficulty understanding learning materials, especially in practical learning. Based on student statements in online interviews, students explained that material that requires practicum and calculations is better if face-to-face lectures are carried out.

2) Lack of internet quota

Basically, the online lecture system requires a large internet quota, this is because learning is done via online applications, especially in video applications such as the Zoom and Google Meet applications and sending assignments through Google Classroom can result in the use of large amounts of internet quota, so that students spend more money to buy internet quota. Due to the high usage of internet quotas, students have to buy quotas in such large quantities. Even though STKIP Tunas Palapa once provided an internet quota of 4 gb (giga bytes) for students, it has not fully accommodated the use of quotas that run quite significantly every time. This is very burdensome for students because not all students work or their parents have more income. The response of students in online lectures is the provision of quotas from the government or the campus without the distribution of application quotas. Dindin Jamaluddin, Teti Ratnasih, Heri Gunawan and Epa Paujiah (2020) in their research also stated that limited internet quota was the main factor in online learning.

3) Complaints about giving assignments

The purpose of lecturers giving assignments after presentation of material through online applications is to expand and multiply students' knowledge and skills, train problem solving skills for students, as an evaluation of the achievement of the material that has been given. But on the other hand, students feel that the evaluation in the form of assignments given is too much and burdensome. In line with that, Agung (2020) in his research explained:

Most of them, 66.7% of students were not enthusiastic about having online learning while 33.3% were enthusiastic. The data of students' perception of the assignments revealed that 57.5% of the assignments weighed them down. Meanwhile, 42.5% thought that the meeting was fun, but they could not stand with the marathon assignments. Online learning was considered as fun teaching and learning compensation during this pandemic. However, the abundance of tasks were killing them because all lecturers gave their assignments to them. Actually, the task given by the lecturer is a process that is deliberately made by the lecturer to assess the learning process, not only to assess the final achievement. Assignments that are not so difficult during online lectures are highly desirable for students, considering that the deadline for submitting assignments for each course is close to each other. Students expect lecturers to provide guidance to students in assignments. Another impact of giving excessive assignments to students is physical complaints from using smartphones during online lectures. This is in accordance with Mustakim's opinion (2020) that using smartphones for too long and too often intensity because they are used to do assignments and open social media cause them to experience physical complaints including eye fatigue, headaches and body aches.

This finding was different from Bali & Liu (2018), demonstrated that level in the university does not have influence to the online learning and face-to-face learning. With respect to learning perspectives, there was no statistically significant difference between the participants enrolled in the online and face-to-face learning. Even though

face-to-face learning perceived more satisfy, many chose online learning over face-to-face classes for the convenience and ease of time and for the opportunity to work when they wanted instead of when they had to (Bhagat, K. K., Wu, L. Y., & Chang, C. Y. (2019; Siah, et al., 2022). In addition, online education has efficient cost, and it allows learners to work at their own pace to complete their full degree. Therefore, instructor must have a concrete understanding of the theory and the practice in order to be effective, whether in online learning or in face-to-face learning in order to experience class participation.

Furthermore, Previous finding have investigated some research regarding to the students perception and satisfaction toward online learning and face-to-face learning. Baker, D. M., & Unni, R. (2018) investigated 156 students who took and enrolled in either an online learning section or face-to-face learning of the Recreation and Tourism course at multicultural university in Northern California, United States. They found that no statistically significant difference in learning preference was found between those enrolled in the two different learning modes.

While, other study found online learning perceived as lack interactivity compared to face-to-face learning. It is mainly due to the lack of social presence, lack of social interaction, and lacks of students' satisfaction (Surani, & Hamidah, 2020). However, online learning has been promoted as being more cost effective and convenient than traditional educational environments (Adnan & Anwar, 2020), as well as providing opportunities for more learners to continue their education.

The present study contributes to the growing body of research on the student's perceptions towards online learning, there are some limitations that should be acknowledged. Firstly, this study explored the general relationship between personality and online learning perception. More in-depth research study is needed to identify the specific design elements of online learning influenced by specific personality traits. Secondly, this study did not control for the effect of prior mutual online learning experience. Thirdly, this study employed self-reported questionnaire responses to collect data, which could result in a response bias. It may be that adding interviews and shifting this to include a qualitative component would make the outcomes more meaningful and explain those items that either did or did not have the statistical support we noted was unclear in terms of their value. Improving the value overall of the piece with better information about the relevance of these items in a selection of respondent's own words would give substantially more power to this study. Future research studies should include qualitative data (e.g., interview) to explore the findings obtained from survey results. Further research pertaining to the likely impact of different personality traits on learning and performance in online environments is suggested.

CONCLUSION

Based on the results of student questionnaires, it can be concluded that students' perceptions of online lectures are less effective. However, the majority of students prefer offline learning in face-to-face classes compared to online learning. This is mostly due to the limitations of students to provide internet quota continuously, understanding of the material is not optimal, limited interaction and burdensome assignments. Although students prefer offline learning in class, there are benefits of online lectures for students, one of which is that it is easy to use online media when learning online, the time and place of lectures are more flexible. Students enjoy the sophistication of technology and are getting used to using online media such as zoom, google meet and google classroom. What's more, students are accustomed to being independent in understanding lecture materials and looking for problem solving solutions from other reference sources or

sharing online with colleagues. The hope of students after undergoing online lectures is that the government needs to ensure the availability of adequate internet network access in all regions and campuses provide subsidized internet quotas for students and for lecturers to make it easier to assign lecture materials, so that online lecture activities can run smoothly and as expected. next year. The results of this survey research can be used as the basis for implementing online learning, especially in the Mathematics Education Study Program in the future. Lecturers can consider the form of online learning that will be carried out next.

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