

Analysis of Middle School Students' Learning Difficulties in Technology-Based Learning during the Covid-19 Pandemic

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Abstract—This study was to describe learning difficulties in technology based on learning during covid-19 pandemic of middle school students. The number of respondents in this study were 20 respondents. It consisted of active teachers of middle school in Pekanbaru, Riau in academic year 2021/20211, in odd semester. The samples were taken by using purposive sampling technique. Data collection in this study used questionnaire. Data analysis include (1) data reduction; by choosing the main points that fit the research focus, (2) presenting data in the form of narrative text, and (3) drawing conclusions or verifying data. The techniques of data collection in this study were a questionnaire about the difficulties of online learning. The questionnaire was conducted to observe the subject's difficulties in online learning during Covid-19 pandemic. Consequently, the result of this study is there are two kinds of difficulties faced by middle school students during online learning; from teachers' side and from students' side. The difficulties in the online learning from teachers' side in learning are the innovation is inadequate; teacher boredom; limited time; limited learning media. On the other hand, the difficulties in the online learning from students' side are the lack of network (internet package); do not understand the application for learning; hard to control the students; and low students' motivation. So, the difficulties in online learning are not only caused by the teacher's side but also from the student's side

Keywords: —learning difficulties, online learning, covid-19.

I. INTRODUCTION

A. Pandemic Covid-19

Over the past year, the world has been plagued by the corona virus (Covid-19). The Covid-19 virus has swept across the world. All countries in the world are affected by Covid-19 without exception. The Covid-19 virus has become an international epidemic. The outbreak of this virus has disrupted various aspects of people's lives. No aspect has been spared from this pandemic. The world is in shock with the rapid spread of the COVID-19 outbreak and Massive disease has caused tens of millions of people to be

infected and spread in hundreds of countries around the world.

B. Education During Pandemic Covid-19

The spread of COVID-19 has affected various fields around the world, including educations. The way to prevent the spread of Covid-19, WHO recommends temporarily stopping activities that can cause a crowd. For this reason, it is necessary to carry out regular learning where many students gather in class.

Education is a process in human life as a means to gain knowledgelater it will be useful to support life in the future. Education during the Covid-19 pandemic is not running as usual. The learning process is carried out indirectly. Learning is done online (in the network). The government's step in this case is to establish distance learning / online (in the network). This is in accordance with WHO recommendations which recommend stopping activities that cause crowds.

The above problems, the government through the Regulation of the Minister of Health Number 9 The year 2020 seeks to minimize the spread of the virus by removing prohibition of gathering and imposing PSBB in almost every region in Indonesia. Other than that, current conditions require its citizens to worship, work and study from their respective homes. This Covid-19 outbreak cause teaching and learning activities cannot be held in the classroom.

The continuity of education during the pandemic will depend on various factors, such as the level of campus preparation, parental readiness, and teacher readiness. Consideration must be given to the need for all students to continue to provide education during the pandemic. Apart from using hardcopy of teaching materials, such as books, workbooks, and other documents sent by post or couriers, schools can use a variety of technology-based solutions to increase the probability students can continue their learning activities.

The continuity of online learning during a pandemic depends on various preparations, both from human resources and the technology used. The running of online learning makes teachers and students do extra preparation. The preparations carried out include making materials that are suitable for students' conditions and the technology used. The preparations made do not make learning avoid various difficulties.

Due to the spread of the Covid-19 outbreak. This is because teaching and learning activities cannot be carried out in the classroom. This condition made education stakeholders had to design alternatives to distance learning. This is done so that learning implementers have various types of alternatives in learning convey learning to students.

Online education services are usually carried out using various applications, such as zoom, google classroom, webex meeting. Can be used according to personal needs. This application is designed for distribute teaching materials to students. The advantages of this application still provide opportunities for connecting lecturers and students, even though they are online. Google Classroom is a model combined learning whose development goal is to facilitate the distribution of learning. This internet-based service is designed with an e-learning system for lecturers and can share material online paperless.

The hope is that through the use of technology in learning, the delivery of learning can be effective. Online learning using zoom applications, Jitzi, Google Class Meet, WebEx, make short video explanations that can be used shared with WhatsApp, YouTube and video recordings that these media can use over and over again. In this case the teacher is required to be able to use technology to be used in learning and require mobile facilities or gadgets that support online learning and can use them and can be connected to the Internet.

Online learning is a remotely assisted learning internet media and other assistive devices such as cellular phones, laptops and computers This means that the implementation of online learning uses elements of technology as tool facilities and the internet as a system. The advantage of online learning is that time is not limited, there is still plenty of time leisure and save on transportation costs. However, in practice, online learning does not as much as learning in class, especially in mathematics. Mathematics is one knowledge that is indispensable in human life, because through this mathematics students are trained to be able to think systematically, logically, critically, and be able to solve problems faced in real life [3], [6].

Difficulties in online learning are felt by both teachers and students. Difficulties experienced include the availability of electronic devices, networks, learning media. Another difficulty that is felt is that there are also difficulties in the economic field, including purchasing quotas, internet payments, and so on. In addition, for middle school students and below, they need assistance, both from parents and teachers. Shortly, there was economical, social, and cultural impact of this pandemic, it impacted all sectors [1], [2], [5], [6].

The Covid-19 pandemic was the first reason why every school was close. Covid-19 pandemic cause public healths

problem [7]. The schools were close more than a semester. For that time, students forced by the state to allow the online learning. Every students and teachers have to challenge themselves to get many impressions. Students and teachers were not ready. Both of students and teachers have to force themselves to follow the pandemic situation [4] [8].

Literature Review

Reports said that the students were stresses during online learning. The burden of student online learning is heavier than offline [1]. Many students reported that they felt difficult in concentrating in learning. It might be heightened the level of stress. Most of students reported that the work was increase as the learning shifted online [3][9]. Beside that, according to teachers, they had not enough time to prepare their material of subject. It made they were not ready to teach [4]. According to the situation, the difficulties in technology based learning during Covid-19 pandemic are Limited ability of teachers and limited ability of students.

II. METHOD

This study used qualitative method with descriptive design. The descriptive which used is purely descriptive, without changes data [10]. This study used descriptive qualitative method. where the researcher is placed as an instrument key. The rationale for using this method is because this research wants to know about phenomena that exist and are under natural conditions, not under controlled, laboratory or experiment. The data collection technique in this research is the questionnaire technique, which consists of: questions related to student difficulties in online learning. Questionnaire given online via google forms and distributed via student WhatsApp.

A. Observation

The point of questionnaire was used to describe learning difficulties. There were 2 categories of difficulties: limited ability of teachers and limited ability of students. The data which served by google form will show the difficulties of online learning during Covid-19 pandemic.

B. Data Analysis

Data analysis shows by descriptive design. The techniques were conducted by: (1) data reduction by choosing the main points that fit the research focus, (2) presenting data in the form of narrative text, and (3) drawing conclusions or verifying data. The techniques of collection the data in this study were a questionnaire about the difficulties of online learning. The questionnaire was conducted to observe the subject's difficulties in online learning during Covid-19 pandemic.

III. RESULT

The data in this study were obtained by observing teachers answer from questionnaire in googleform. The point of questionnaire were 16 statements. That represents the possibility of difficulties in online learning in Covid-19 pandemic. The statements of the questionnaire were about the difficulties according to teachers and according to students. The statements contained in questionnaire:

TABLE I. STATEMENTS IN THE QUESTIONNAIRE

No	Statements	Respos
1	The network in the student study area is not good.	TS, KS, S, SS
2	Inadequate student internet packages.	TS, KS, S, SS
3	Gadgets are used by students together with siblings, so the learning process is disrupted.	TS, KS, S, SS
4	Students do not understand using online learning applications.	TS, KS, S, SS
5	Students are late for online classes.	TS, KS, S, SS
6	Students are inactive/unresponsive during online learning.	TS, KS, S, SS
7	It is difficult to control students to focus on paying attention to learning during online learning.	TS, KS, S, SS
8	Students are not punctual in submitting assignments.	TS, KS, S, SS
9	Lack of educational facilities for the use of technology for students.	TS, KS, S, SS
10	There is student saturation in the online learning process.	TS, KS, S, SS
11	Students' learning motivation is low because they do not meet face to face.	TS, KS, S, SS
12	Innovation in the use of software does not attract students' interest.	TS, KS, S, SS
13	Lack of educational facilities for the use of technology for teachers so that the expertise of teachers in learning innovation is inadequate.	TS, KS, S, SS
14	There is teacher saturation in the online learning process.	TS, KS, S, SS
15	Lessons are not delivered optimally because time is limited.	TS, KS, S, SS
16	The limitations of learning media that can be used by teachers in delivering material so that the learning process is only an independent task.	TS, KS, S, SS

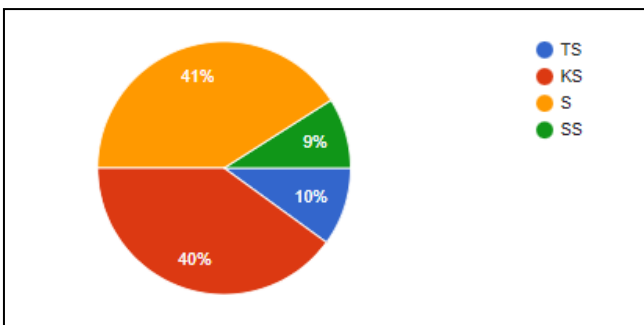


Fig. 1. The network in the student study area is not good.

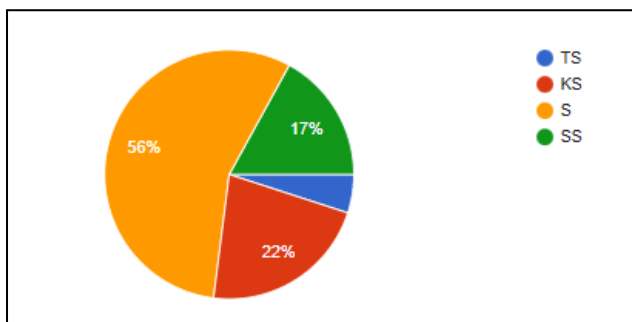


Fig. 2. Inadequate student internet packages.

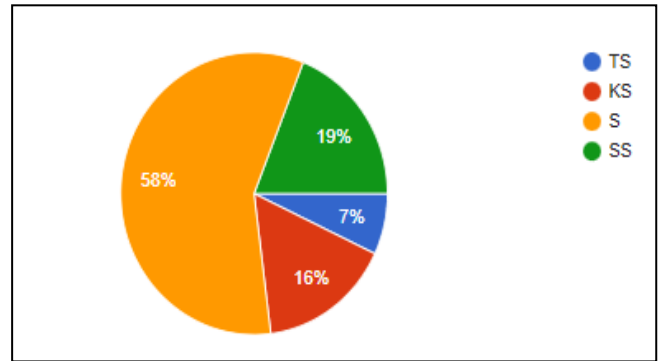


Fig. 3. Gadgets are used by students together with siblings, so the learning process is disrupted.

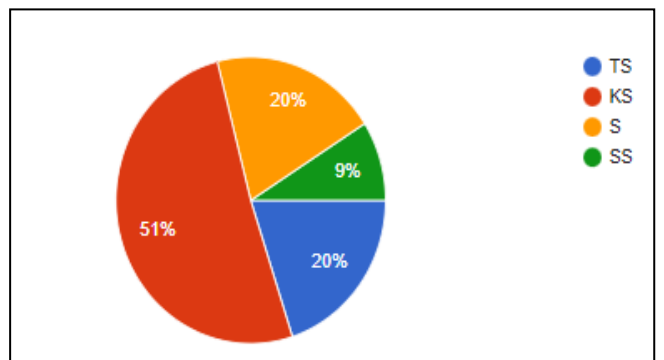


Fig. 4. Students do not understand using online learning applications.

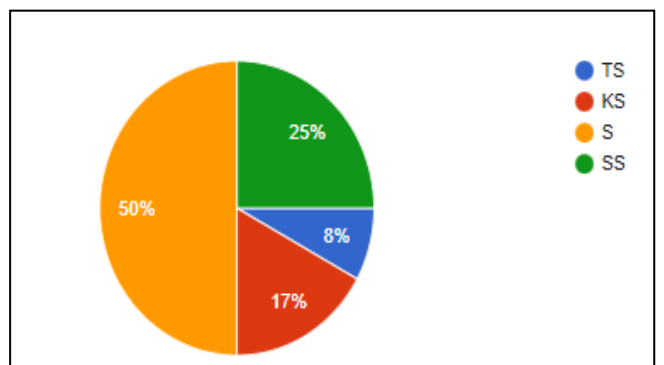


Fig. 5. Students are late for online classes.

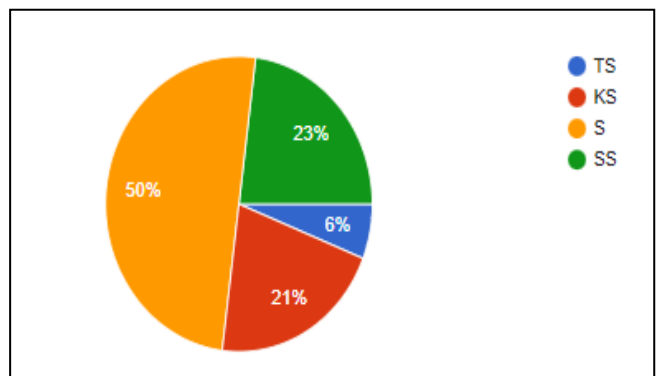


Fig. 6. Students are inactive/unresponsive during online learning.

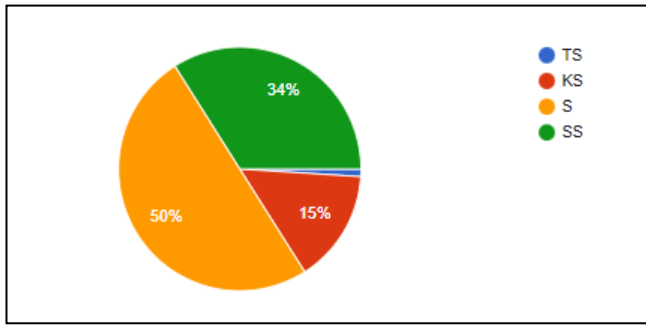


Fig. 7. It is difficult to control students to focus on paying attention to learning during online learning.

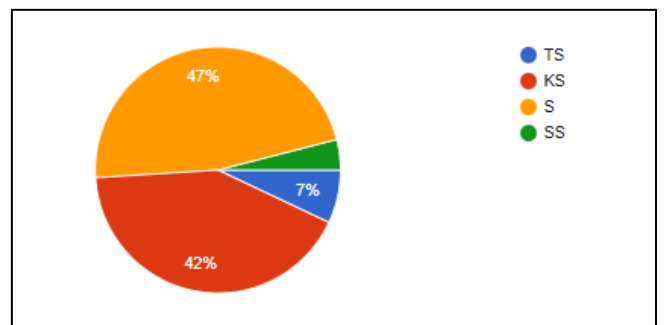


Fig. 12. Innovation in the use of software does not attract students' interest.

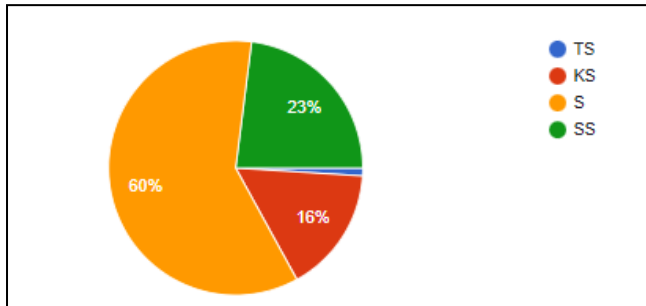


Fig. 8. Students are not punctual in submitting assignments.

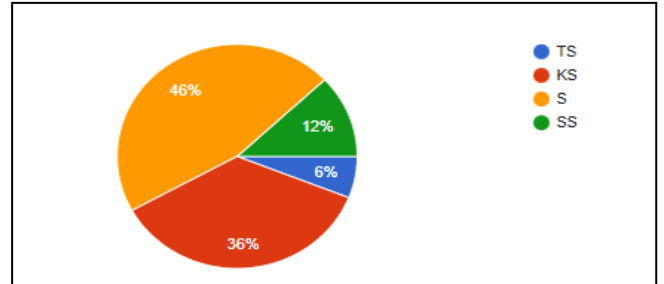


Fig. 13. Lack of educational facilities for the use of technology for teachers so that the expertise of teachers in learning innovation is inadequate.

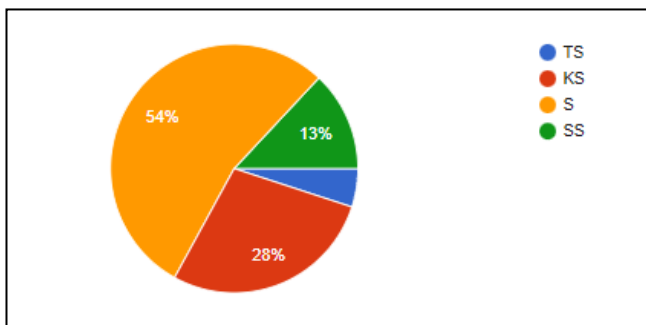


Fig. 9. Lack of educational facilities for the use of technology for students.

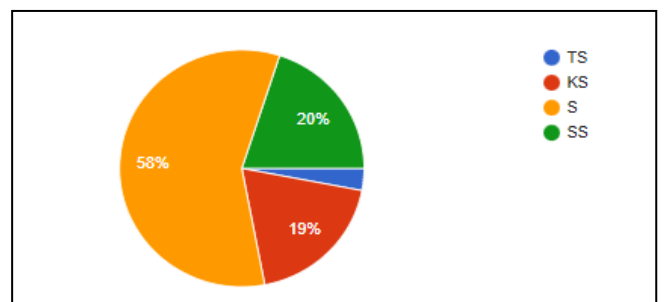


Fig. 14. There is teacher saturation in the online learning process.

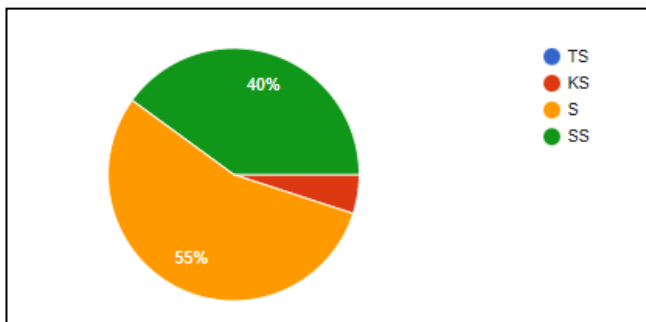


Fig. 10. There is student saturation in the online learning process.

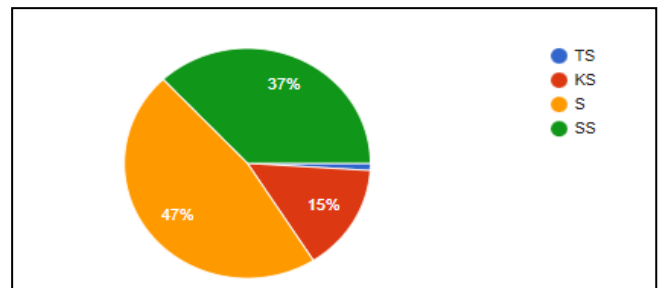


Fig. 15. Lessons are not delivered optimally because time is limited.

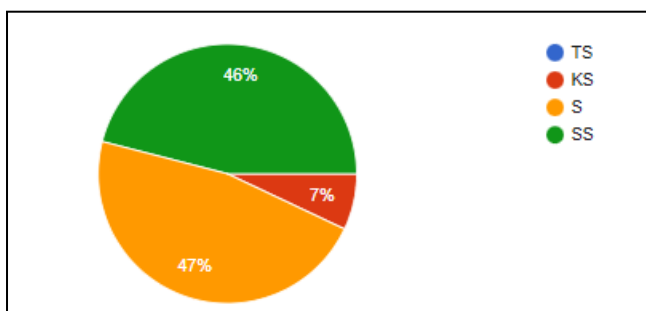


Fig. 11. Students' learning motivation is low because they do not meet face to face.

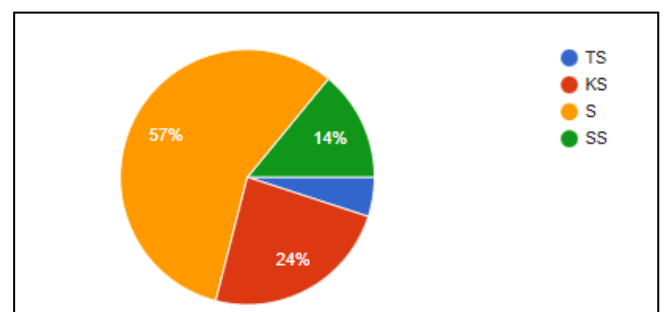


Fig. 16. The limitations of learning media that can be used by teachers in delivering material so that the learning process is only an independent task.

Fig. 1 until 16 show that all the statements in questionnaire take effect to online learning through pandemic Covid-19. Most of the percentage agree for the statements.

IV. DISCUSSION

From the results, there were some reasons of the difficulties in online learning. From teachers' side, Lack of network and internet packages. Although the government had given internet package for online learning, but not every student can use that for learning. Do not understand online application. It happened at first meeting in learning. Be hard to control the students. The students do not be handle by the teacher all the time of learning because of media limitation. Other than that, there were low students' motivation. There were some reasons from the statements.

First, difficulties according to teacher. Factor that affect teachers' difficulties are the expertise in learning innovation is inadequate; teachers' boredom; limited time; and limited learning media. Teachers' expertise in learning innovation is inadequate, before the pandemic occurred, the ability of teachers in learning was very lacking, especially teachers who had been teaching for decades. It's not that they are completely uneducated, but they are experts in traditional teaching. This is what makes their skills inadequate in teaching online.

Other than that, there were teacher boredom. Teachers feel bored with online learning. teachers cannot explore in teaching. Teachers cannot channel their abilities directly in teaching. limited time and fourth limited learning media. The teacher has few times to prepare. For teachers who are not very understand in technology, it takes a long time to prepare effective technology-based learning media.

Second, difficulties according to student. Factor that affects students' difficulties in online learning is ineffective time online learning. That were lack of network and internet package. The student sometimes cannot use the package which given by the government, because different application the use in learning. Student cannot understand the leaning application at first. Students were hard to be control. It is because the teacher cannot see the students directly. Low students' motivation. Because of not learning face to face directly, some student cannot pay good attention to the teacher.

V. CONCLUSION

Based on the discussion of the results of research that has been completed, it can be concluded that the difficulties in online learning in Pandemic Covid-19 are from teacher and from student. Regarding the difficulties faced by students when online learning is dominated by networks inadequate internet and an indiscipline. As for the difficulties that faced by teachers and students when online learning due to several reasons factors, namely: (1) The network in the student study area is not good; (2) Inadequate student internet packages; (3) Gadgets are used by students together with siblings; (4) Students do not understand using online learning applications; (5) Students are late for online classes; (6) Students are inactive/unresponsive during online learning; (7) Difficult

to control students to focus on paying attention to learning during online learning; (8) Students are not punctual in submitting assignments; (9) Lack of educational facilities for the use of technology for students; (10) There is student saturation in the online learning process; (11) Students' learning motivation is low because they do not meet face to face; (12) Innovation in the use of software does not attract students' interest; (13) Lack of educational facilities for the use of technology for teachers so that the expertise of teachers in learning innovation is inadequate; (14) There is teacher saturation in the online learning process; (15) Lessons are not delivered optimally because time is limited; (16) The limitations of learning media that can be used by teachers in delivering material so that the learning process is only an independent task.

The results of research that have carried out becomes the basis for researchers to carry out further research on the difficulties of online learning of mathematics for various grade levels. Finally, the researcher suggests other researchers to explore more about the difficulties of online learning. Due to a pandemic situation like currently, comprehensive studies are needed to find out good adaptation when learning online.

VI. ACKNOWLEDGEMENT

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