

Application of Microsoft Teams Applications in Mathematics Learning

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Abstract: Conditions that occur in the world of education involve learning that is required to take place to achieve predetermined competency targets. Substantially the direction of distance learning must really be an alternative that can support education. The Microsoft Teams application is one of the learning applications that can be applied to online distance learning during the covid-19 pandemic, with the application of the Microsoft Teams learning application, teachers can increase students' interest/motivation in learning while they are at home. This study aims to explain the implementation of mathematics learning, the application of the Microsoft Teams application, and the obstacles encountered by mathematics teachers using the Microsoft Teams application in learning mathematics. This type of research uses qualitative research with a case study approach. The subjects in this study were 1 mathematics teacher and 5 students in class XI IPS 5 whose learning was done through the Microsoft Teams application. This research trial was in class XI IPS 5 with 35 students. Data collection methods used interviews, observations and take notes. The data analysis used is the Analysis Interactive model from Miles and Huberman. The results show that 1) learning mathematics during distance learning using the Microsoft Teams application at Perintis 2 Senior High School Bandar Lampung can still run smoothly, but this condition can also affect teacher interaction. and students in learning. 2) the teacher has been able to apply the Microsoft Teams application in learning because there are media that support the teacher during online learning, the learning media in question are the meter, quiz, padlet and group room. The obstacles encountered by the teacher in learning mathematics by implementing the Microsoft Teams application are mainly on the internet network so that students are quite passive in implementing mathematics learning. This finding leads to a recommendation for the government to develop learning media in the Microsoft Teams learning application so that it can improve student and teacher understanding in learning mathematics during distance learning.

Keywords: Distance learning, Microsoft Teams App, Math Learning

1. Introduction

Corona virus disease (Covid-19) in 2019 affects the whole world (Yang et al., 2020). Wuhan, in central China, is the country's seventh largest province with a population of 11 million people (Biomedika, 2020). The corona virus (Covid-19) has spread and entered Indonesia since early March 2020 and continues until now in 2021, there are 17,514 confirmed positive cases spread across 34 provinces and 415 regencies/cities. (Herliandry et al., 2020). These characteristics have brought drastic changes in various sectors, including the economy, politics, tourism and education. The Minister of Education and Culture coordinates learning through an online system or online through learning media (Pakpahan & Fitriani, 2020). The education process, which before the Covid-19 Pandemic was carried out directly or face-to-face, where students and teachers were in the same classroom to follow the same learning process. However, when the Covid-19 pandemic broke out, the Government gave an appeal for activities that were previously conventional or face-to-face at schools to be carried out face-to-face through online distance learning or cyberspace. Because the situation is not possible to do face-to-face as usual. With the help of technology today, we can connect with other people remotely in various ways (Pakpahan & Fitriani, 2020). Technology and communication are so fast in the world of education, thus the learning needs of students are made easier by the availability of learning applications that can be applied to distance learning. Distance learning process by combining principles in the learning process with technology (Cucus & Aprilinda, 2016). The purpose of distance learning is to be able to prevent the existing covid-19 disease and of course to meet our educational standards by utilizing technology and information (ICT) through computers or gadgets.

Conditions that occur in the world of education involve learning that is required to take place to achieve predetermined competency targets. Substantially the direction of distance learning must really be an alternative that can support education. Distance Learning is learning that is carried out through media where there will be interaction between students and teachers Prawiyogi et al., (2020). Temporary Abdul Latip (2020) It is said that distance learning itself is carried out indirectly between students and teachers. This means that distance learning is carried out in a virtual world between teachers and students who are physically separated. The implementation of distance learning that is carried out certainly causes problems with the system designed by the government, such as class organization, innovation in the use of media, learning resources, models, and learning approaches. (Kurniawan, 2020) For this reason, mathematics teachers must be professional in their knowledge, skills, appreciate, mastered and realized their abilities Sulfemi, (2016). The role of mathematics teachers is very important to teach the values of a nation that has the ability to achieve the goals of students. Thus the mathematics teacher is the main actor for the success of mathematics learning and by carrying out a good learning process to be developed by students. The emergence of technology and communication in this era means that there are so many learning applications that are used, so teachers can apply learning applications for the realization of online classroom learning. In an online distance learning plan there are teachers who guide the implementation of the teaching and learning process by applying media or applications that have been developed at this time, such as Google Classroom, Edmodo, Zenius, Microsoft Teams, Zoom Meeting and various other media and learning applications, Fazar, (2020:61) in (Wirza & Ofionto, 2021).

Problems in the implementation of learning experienced by teachers and students during distance learning during COVID-19 certainly cause symptoms in learning. Moreover, mathematics is always impressed with numbers and formulas if the application of applications that do not seem good to increase students' interest in learning in this online class. Microsoft Teams is one of the subscription application products on Office 365 released from Microsoft or can be called Teams (T. H. Widiyarso & Utama, 2021). Microsoft Teams which was officially launched by Microsoft in November 2016 (Sercan, 2018) Microsoft Teams brings conversations, meetings, files and apps together in one Learning Management System. (LMS) (Tapp, 2019). Microsoft Teams features Chat, Calls (Video Conference), File and Assignment (Wirza & Ofionto, 2021).

For this reason, by using Microsoft Teams, teachers can not only collaborate with team members who are within the Teams feature itself but teachers can communicate with team members who are outside via guest access outside organizational boundaries. (Putri, 2020). Thus, educators collaborate to create a good learning environment in the classroom online (Situmorang, 2020). Microsoft Teams aims to be as personal, engaging and socially connected as learning in a classroom (Situmorang, 2020). Therefore, Microsoft Teams can allow teachers and students to communicate face-to-face online as if they were in a conventional classroom.

As for the advantages of the first Microsoft Teams application. Easy to manage groups, Managing groups can be done easily in Microsoft Teams. should exist in every workgroup application with it so that each user can freely manage and regulate the activities carried out. Second Provide editing and sharing files anywhere File editing services, making it easy for users to create files anywhere and anytime without having to open other applications. Microsoft Teams also makes it easy to share files on each grub that has been made in various formats, be it zip, pdf, docx, pptx or other file extensions, of course, in large quantities. Third Provide HD video quality and good audio. Another advantage of Microsoft Teams is that it has advantages in HD video quality, of course, it really makes people feel comfortable when watching it and the clear and clear audio quality makes it more comfortable when we use it. HD quality is very important to Microsoft Teams in every video conferencing application. Because the advantages of the apk are determined by how good the quality of the video is which makes it superior and good. Fourth, only save important conversations. Every chat or conversation in grub is stored in Microsoft Team, this makes it easier for us to know what conversations we have made and we share with everyone in the grub. Important conversations should be specially archived by each application which makes it easy for users to view them and that is the advantage of archiving our data in Microsoft Teams. Fifth, Quickly find what you are looking for in a

conversational chat. Conversations or chats every meeting are certainly not small in number and are mixed between important and unimportant. It could be that everything will be deleted if we do not save it.

It's different with Microsoft Teams, every time we look for something important, it must be provided. Finding what we are looking for in Microsoft Teams is an advantage when we use MS Teams. Not infrequently it is so easy for us to search for every word and even sentence in every conversation or data that comes into MS Teams. Sixth Security directly from Microsoft The security sector is very superior, why is it because it is directly supported and developed directly by Microsoft, which we know as the largest software company in the world and of course in security, don't ask again. Microsoft Teams also keeps our data safe. Microsoft Teams has advantages in terms of security that are often underestimated by similar application providers who carelessly make these applications (Herminingsih, 2021). The Microsoft Teams application that is implemented has advantages that teachers can take advantage of in transferring materials such as Outlook, One Drive, Word, Excel, Power Point, One Note, Share Point, Teams, Classnote, Sway and Form (Rahmah Tahir et al., 2021). So with that feature that can be implemented in distance learning, office word features can be used in preparing lesson plans, syllabus for the learning process in class, office excel features that can be used to conduct assessments, office power point (PPT) used in learning in class teachers can display materials that have been designed, office forms can be used to prepare questions and questionnaires, chat rooms can be used by teachers to interact with students (Saputra & Saddhono, 2021). So with the advantages possessed by Microsoft Teams, educators and students are able to take online distance learning quite well.

Based on the initial observations made by researchers that learning mathematics in distance learning does bring new impacts for teachers in implementing learning that attracts students' attention, this needs to be adjusted to the existing pandemic, not only that but there are problems encountered by students. students with the adjustment of the new learning model, this situation causes symptoms in distance learning itself. During distance learning, students who don't have an Android cellphone don't even have a laptop or notebook to use to access the application so that teacher and student meetings are hindered. This research is focused on learning mathematics which is carried out remotely online using the Microsoft Teams learning application. The purpose of this research is to explain how the implementation of mathematics learning, mathematics teachers can apply the Microsoft Teams learning application with various forms of media that are within the teams themselves and the obstacles encountered by mathematics teachers in learning mathematics during distance learning.

2. Significance of The Study

In the distance learning process the teacher plays the role of a facilitator as well as a tutor for students when learning with the Microsoft Teams application, how can teachers support distance learning if the teachers themselves do not master and apply learning using the Microsoft Teams application. overcome this here is to provide training facilitation for teachers to provide lessons using this application. Training must be carried out by teachers or education personnel who really know and master how to use it. After all teachers can master the use of the Microsoft Teams application, the teacher can apply and train students, if this can be done, the researchers believe that teachers can fully support the mathematics learning process with a distance learning approach through the Microsoft Teams application as a learning tool used by schools to carry out face-to-face meetings. face online during the covid 19 pandemic.

Regarding the application of learning applications implemented by the institution, it shows that mathematics learning is indeed very monotonous if the distance learning model (PJJ) does not attract students' attention. It is very important to implement learning applications that attract student interest/motivation in improving student learning outcomes. As a teacher, it is necessary to implement distance learning that is truly mastered by students so that the material presented can be digested properly. Previously, at school we were still implementing it by utilizing google classroom, but it didn't work and then there was a teacher friend at IGI (Indonesian Teachers Association) who informed us to take part in trainings related to the implementation of Microsoft Teams learning that was able to explore the world of education Z (2020).). Z together with 5 teachers who attended training on the application of the Microsoft Teams learning application and they can be appointed as driving teachers who when

they return to school will apply how to use the application, so that other teachers can apply it to their subjects in online classes. Agencies in this school can take advantage of the Microsoft Teams learning application as a product that can be used as a distance learning tool during a pandemic.

The Microsoft Teams learning application that is used is very helpful for teachers in transferring knowledge, because according to him, Microsoft Teams is very easy to use because it can directly collaborate in teams, both students with students and students with teacher Z (2020). During the process of learning mathematics in distance learning (PJJ) using the Microsoft Teams application, Z found it easy to be given groups by students like being in a face-to-face class, meaning that students could take part in group discussions from the beginning to the end of online class learning well, because in the Microsoft Teams application there is a new feature, namely the begraoud room which supports teacher Z in dividing groups. In accordance with the observations of the researcher in class Z, the researcher saw that the group division carried out by teacher Z with the learning room media was a manual system so students were divided into 4 group rooms with each group leader.

Begraoud room is very well applied when dividing groups during distance learning as in face-to-face classes, even though it is not optimal. And it seems that this begraoud room can be determined automatically, but teacher Z is more effective in distributing groups of students manually. The pattern of application, distance learning carried out by teacher Z is very good in the implementation of mathematics learning. This is in accordance with the observations of researchers in teacher Z's class that the methods and learning media that are explored are very consistent with current online learning. There are several learning media that are applied. According to the observations of researcher Z during online class learning, Z uses a mentimeter as a reflection material for students in class, while quizzes are used by Microsoft forms to send questions to students, while padlets are used as a means of student group discussion. . Thus, in distance learning, it is necessary to strive for learning methods and media that really attract students' interest and motivation to learn, especially history which always seems boring if the media does not support the implementation of learning. In the implementation of distance learning that is applied to mathematics subjects, students say that learning mathematics through distance online certainly brings them to mastery of technology and communication in accordance with current world developments, but the most fun is when they are in class. directly conventional.

3.Review Of Related Studies

During the covid-19 pandemic or corona virus that has an impact on the world and especially Indonesia. Teachers and students are closed in accordance with Ministry of Education and Culture Regulation No. 3 of 2020. This means that teachers and students must do learning at home, this can encourage teachers to apply interesting applications or learning media for distance learning. Interesting and interactive learning media are needed so that the learning process takes place optimally because it can foster student interest and motivation to learn (Syahroni et al., 2020). The application of distance learning that can be done, of course, teachers and schools have facilitated media or learning applications that can physically meet virtual faces. Distance learning that was applied during the pandemic at Perintis 2 Senior High School Bandar Lampung was a Microsoft Teams learning application.

The Microsoft Teams application is a learning application that can be done collaboratively between teachers and students who are physically separated, meaning that learning takes place in their respective homes. Regarding the application of the Microsoft Teams application, if it is the distance learning model (PJJ) that attracts students' attention, then learning feels fun, it is supported by interesting distance learning methods and media in the implementation of the teaching and learning process Z (2021), thus students are not impressed. bored and bored in following every online learning process in class. Teacher Z himself designs and implements features that support students with each teaching material. This will make students feel enthusiastic in participating in mathematics learning, because students can find new things from every application of the Microsoft Teams application given by the teacher. By using the Microsoft Teams app, students are easily accessible when given an assignment. And after that, the student can see the value obtained, and there is feedback between students and teachers or students with students, when learning is taking place in the online class Z (2021). Teacher Z's opinion is in line with the opinion of Nafisah & Fitrayati (2021) who said that Microsoft Teams looks easy to access, learning materials can be understood and the advantages they have.

For this reason, smartphones and tablets are most often used for mobile devices Techterms.com, (2019) in (Tapp & Martin, 2019). Teachers can share audio, video, and content such as Microsoft PowerPoint presentations; and audience members can interact with each other as well as the presenter through voice and text (Henderson et al., 2020). This means that teachers are able to interact with students and students with students during distance learning in online classes. In its application, according to observations, teacher Z uses the learning room media for student group discussions. In the implementation, Z divided into 4 groups of students manually, each with a group leader to

carry out discussions. It is also possible to share group rooms automatically, but Z prefers to use the manual method so that he can collaborate between students who know and students who do not know in class, because according to him he can understand the situation of student Z (2021).

In the research, Kahoot media has four features, namely: games, quizzes, discussions and surveys Gres Dyah Kusuma Ningrum, (2018). This is as shown in the researcher's observations while being included in class Z after completing the group division in the begraoud room, then students are directed to discuss through the media padlet, meaning that the student has finished discussing with the module that has been given by the teacher through Microsoft Teams. media padlets. And after that students were asked to summarize the discussion material in various forms through power points and posters. Even in the interesting learning is the media game/game, the groups in the room will also be directed to evaluate the math material that has been given by the teacher. Thus, the inclusion of interesting learning media like this will make the implementation of mathematics learning very effective. In fact, the researchers hope that if the COVID-19 pandemic continues in the future, the Microsoft Teams application will continue to be upgraded so that distance learning can continue to run well.

4.Objective Of The Study

The purpose of this study aims to explain the implementation of mathematics learning, the application of the Microsoft Teams application, and the obstacles encountered by mathematics teachers using the Microsoft Teams application in learning mathematics. In this study, the researcher used field analysis using the Miles and Huberman model in analyzing the data obtained from observations, interviews and take notes. The data analysis technique used is descriptive qualitative. This technique is expected to go through three paths, namely (1) data reduction, (2) data presentation, and (3) conclusions drawn by Miles and Huberman (1994) in (Henricus Suparlan et al., 2015). In data reduction, researchers carry out the process of selecting, simplifying, abstracting and transforming raw data or raw data that emerges from field notes. Presentation of data is that researchers carry out the process of compiling complex data into a systematic form or pattern, so that it is simpler, clearer, and easy to understand the meaning content. Conclusions are tentative. Data reduction in this study will be carried out continuously during the research. The steps are sharpening the analysis, classifying or categorizing, directing and removing unnecessary and organizing the data so that the final conclusions can be drawn and verified.

5.Hipoheses Of The Study

Before the researcher entered with the application of learning the Microsoft Teams application and the teacher's obstacles during mathematics learning, the researcher looked at the implementation of online mathematics learning in class. The government's policy to close schools is related to preventing the spread of the Corona Virus in educational institutions which forces conventional face-to-face learning in the classroom to be replaced with face-to-face learning online from their respective homes. Thus, it requires schools and teachers to make new strategies in adjusting the facilities and methods used in accordance with the policies issued by the government. The success or failure of a learning process is seen from good classroom management Yuliani, M., Simarmata, J., Susanti, S. S., Mahawati, E., Sudra, R. I., Dwiyanto, H., ... & Yuniwati, I. (2020). The findings at the research location indicate that the school and teachers at Perintis 2 Senior High School Bandar Lampung have made adjustments to facilities and methods in the learning process carried out remotely. The school has prepared online learning facilities with learning applications, namely the Microsoft Teams subscription application to support the implementation of education. The Microsoft Teams application that is being carried out is one of the applications issued by Microsoft Office 365 for the course of education at the agency.

In implementing mathematics learning during the distance learning period at Perintis 2 Senior High School Bandar Lampung, the school has followed government regulations to make adjustments. The teaching time for mathematics subject teachers has been adjusted to the policy of the Ministry of Education and Culture (Kemendikbud) to 2 (times) 30 minutes in 1 (time) meeting which normally before the PJJ period each teacher is given 45 minutes in 1 lesson hour. Before learning starts at 07:00 the lesson schedule and daily meetings have been made by the teacher and appear automatically on the student screen according to the time duration that has been set. And if there are students who do not participate in learning, it means that students are declared absent. When observing mathematics learning in class XI IPS 5 online, the learning activities implemented by the teacher run consistently. Starting from opening activities to closing activities (IK, 2021, DV, 2021, PT, 2021). To ascertain whether the learning was done as it was by the teacher, the researcher tried to interview students whether it was true that the student entered without the teacher informing or sharing another link related to the implementation of mathematics learning in this Ms Teams class. The results of the interviews have shown that the teacher carries out

the implementation of mathematics learning, the teacher has arranged meetings and schedules with the specified time duration.

In the following research findings, the researcher discusses the obstacles and advantages that are obtained during the mathematics learning process for students and also teachers during distance learning. This means that during distance learning (PJJ) there are students who do not have technological facilities for learning, not only that but there are students who are at home experiencing their own challenges, because the home environment is not good for participating in online learning. In the application of the Microsoft Teams learning application, there are students who do not have an Android cellphone or laptop for the realization of online classroom learning. However, as for the solution that was outlined during the teacher's deliberation at the school related to student barriers in the absence of facilities as described, the teachers agreed that students could be directed to use the property of friends or neighbors and if there were none at all, the student was directed to school to use the school's computer. For the application of the Microsoft Teams learning application online, of course it is difficult for teachers to hear and know the whereabouts of their students Z (2021).

According to the researcher's observations during the implementation of the learning process, of course, to improve student learning outcomes in online distance learning, in class Z in its application using games or games as a student evaluation material. So the student is given material in the form of a game, according to the researcher, students are able to understand the mathematical material that has been conveyed by the teacher so that their learning outcomes can be improved. However, their weaknesses must also be supported by good internet network conditions. Furthermore, the researchers interviewed all students, the results of the interview showed that "our mathematics teacher has implemented learning media that attracts interest/motivation, we play games in the form of groups so one student is appointed as chairman to lead their respective groups but the thing that becomes constrained is Internet Network"

The next finding is about the advantages in learning mathematics by applying the Microsoft Teams learning application. Microsoft Teams is very well implemented because Teacher Z applies learning methods and media that attract interest/motivation. The advantages in the Microsoft Teams learning application are very many learning media. This can be seen from the interview of teacher Z who said that As said by teacher Z that: "I think the advantage of Teams is that it is very efficient in supporting the teaching and learning process through the completeness of its features" This application was developed directly by Microsoft to facilitate educators and educators. students during the implementation of online distance learning. With the advantages that exist in the MS Teams application, teachers can apply all the features that can support them in the implementation of mathematics learning that takes place in virtual classrooms. Features that can be applied are a mentimeter, quizzes and padlets and even a breakout room which has just been implemented for implementation of learning.

Mathematics is a scientific discipline that falls into the category of theory rather than practice. The dominance of theory in learning mathematics provides a big challenge for mathematics teachers to continue to teach mathematics to students according to the needs and objectives of implementing mathematics learning in high school. From the results of research in the field, mathematics teachers at Perintis 2 Senior High School Bandar Lampung continue to carry out their obligations in accordance with teaching procedures in carrying out the mathematics learning process during distance learning. However, the teaching and learning process has not been realized properly because of the demands on teachers to be able to immediately adapt to distance learning patterns. Mathematics teachers are expected to be able to develop new strategies in implementing online mathematics learning independently and innovate in creating simple learning that is still easily accepted by students.

6. Population and Sampel

In this study the population used was all students of class XI at SMA Perintis 2 Bandar Lampung, with a sample of 35 students in class XI IPS 5 SMA Perintis 2 Bandar Lampung. The next finding is about the advantages in learning mathematics by applying the Microsoft Teams learning application. Microsoft Teams is very well implemented because Teacher Z applies learning methods and media that attract interest/motivation. The advantages in the Microsoft Teams learning application are very many learning media. This can be seen from the interview of

teacher Z who said that As said by teacher Z that: "I think the advantage of Teams is that it is very efficient in supporting the teaching and learning process through the completeness of its features" This application was developed directly by Microsoft to facilitate educators and educators. students during the implementation of online distance learning. With the advantages that exist in the MS Teams application, teachers can apply all the features that can support them in the implementation of mathematics learning that takes place in virtual classrooms. Features that can be applied are a mentimeter, quizzes and padlets and even a breakout room which has just been implemented for implementation of learning.

7.Recommendation

- Effectiveness of Online Learning with Microsoft Teams on Linear Course Material Mathematics Lessons
- Implementation of Microsoft Teams Application-based E-Learning in the Distance Learning System in Mathematics Learning for the 2020/2021 Academic Year
- Microsoft Teams in Mathematics Learning to Realize Independent Learning
- User Perspective on Microsoft Teams Application Deployment
- The Influence of Microsoft Teams as an Online Learning Media on Critical Thinking Ability
- Analysis of student activities in Online Learning Using Microsoft Teams during the Covid-19 Pandemic
- Analysis of Science Process Skills and Student Interest in Online Learning Using Microsoft Teams . Media

8.Conclusion

The findings and discussion in the field show that teachers have the ability to apply the Microsoft Teams application in learning mathematics during online distance learning. This can be seen from 1) history learning during distance learning using the Microsoft Teams application at Perintis 2 Senior High School Bandar Lampung can still run smoothly, but this condition can also affect the interaction of teachers and students in learning. 2) the teacher has been able to apply the Microsoft Teams application in learning because there are media that support the teacher during online learning, the learning media in question are the meter, quiz, padlet and group room. The obstacles encountered by the teacher in learning mathematics by implementing the Microsoft Teams application are mainly on the internet network so that students are quite passive in implementing mathematics learning.

The limitation of this research is that the Microsoft Teams application has been well developed for distance learning, but it is a challenge in itself for the application. This happens in a student environment that is less conducive to learning, therefore the researchers suggest for the government to be able to develop learning media in the Microsoft Teams learning application so that it can improve student and teacher understanding in learning mathematics during distance learning.

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