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Implementation of Think Pair Share during Limited Face-to-Face Learning to Improve Students' activeness, Concept Understanding, and Learning Outcome

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Abstract: Activeness and concept understanding during limited face-to-face learning needs to be studied. This study is reviewed from the activeness, concept understanding, and student learning outcome through the Think Pair Share learning model with several actions. Classroom action research with a qualitative approach was carried out on a public junior high school at Pasuruan, Indonesia with 16 grade 8 students as research subject. The instruments of this research were test, observation sheet, and documentation. Data analysis was carried out by describing the activeness, concept understanding, and student learning outcome. The results show that there was a significant increase in the activeness and concept understanding so that student learning outcome also increase by using Think Pair Share during limited face-to-face learning.

Introduction

Implementation of online learning causes many problems for students one of them is the difficulty of implementing distance learning thus triggering saturation (Agusriani & Fauziddin, 2021). Moreover, during the implementation of distance learning other problems arise such as students find difficulties to understand the learning material so they do not control learning well. After almost 2 years since the implementation of distance learning due to COVID-19, following Press Release No 137/spires/A6/VI/2020 regarding the implementation of learning in the new school academic year during the COVID-19 pandemic which states one of the important points, namely the implementation of limited face-to-face learning (*Pembelajaran Tatap Muka Terbatas* is abbreviated as PTMT) may be carried out in areas in the green zone category. One of the areas in the green zone category is Pasuruan Regency so that it can carry out PTMT. Along with the press release, the Government through the MENDIKBUD began to set strategies so that learning can be carried out face-to-face by ratifying Circular Letter No. 2 of 2021 regarding the implementation of PTMT. This policy will be implemented in July 2021 provided that all educators have been vaccinated, restrictions on class hours, distribution of student attendance schedules, arrangement of study room layouts, and

the application of strict health protocols.

Face-to-face learning is classical learning where teachers and students meet face-to-face in the same classroom (Nissa & Haryanto, 2020). PTMT takes place with very limited lesson hours. This very limited time has a new impact on teachers and students. Among them, teachers have difficulty managing learning and increasing saturation in students due to material shared being quite dense more dominated by a teacher, and the piling up of assignments from teachers (Onde et al., 2021). Therefore, teachers need an appropriate learning model to maximize learning hours, the share of material and be able to create a sense of comfort in students. Students can have high motivation to be actively involved and able to understand lessons and express mathematical concepts creatively. Communicating mathematical ideas can support students' understanding (Kurniawan et al., 2019).

Problems regarding activeness, concept understanding, and low student learning outcome during PTMT were also found in MTsN 1 Pasuruan, especially in class VIII H. Student's activeness desired in this research is learning activeness. Learning activeness is a matter when students can be actively involved in the learning process (Hamalik, 2008). Teachers need to directly monitor students' activeness during the learning process. The criteria for students' activeness can be divided into several indicators. A teacher can see students activeness from several indicators as follows: (1) students have consistency in doing assignments, (2) students are actively involved in solving problems, (3) students active to ask the teacher or other students if they have a lack of understanding, (4) students have an effort to get various information needed to solve problems, (5) students get used to practicing themselves in solving problems, and (6) students evaluate their abilities and the results they get (Sudjana, 2004).

Students who have high learning activeness will have a high curiosity too. This will have a good impact on understanding the concept. Students require the concept understanding well in order to obtain a success in mathematical problem-solving or learning (Rofiki et al., 2017). There are three main concept understanding, namely the ability to recognize, explain, and draw conclusions (Nasution, 2010). Meanwhile, the indicators for concept understanding are written in the Regulation of the Dirjen Dikdasmen Depdiknas No 506/C/Kep/PP/2004 (Nugroho & Wardani, 2019) that is, students are able: (1) rewrite the concepts that have been obtained, (2) arrange and distinguish objects with certain properties by existing concepts, (3) distinguish examples and non-examples of a concept, (4) present concepts in various forms of mathematical representation, (5) develop the necessary provisions of a concept, (6) apply, utilize and select certain stages and operations, and (7) apply appropriate concepts to problem-solving.

Think Pair Share is one of the learning models that can increase students activeness and understanding of concepts (Sururoh et al., 2018). Think Pair Share emphasizes three procedures, that is Think, Pair, and Share (Kaddoura, 2013; Mustafia, & Widodo, 2018;

Parker & Asare, 2021). In PTMT, implementation of Think Pair Share is one option to increase activeness, concepts understanding, and student learning outcome, especially in learning mathematics. The reason is, in the implementation of Think Pair Share students are given more time to think, are allowed to help each other, and discuss and express opinions/present their work. The Think Pair Share makes each team active in discussing and working together and makes students have an attitude of responsibility both to themselves and their teams. The existence of activgroueness in this discussion makes students' memory stronger so that the ability to understand the subject matter and learning outcome also increases (Ni'mah & Dwijananti, 2014). Learning using the Think Pair Share model has a very positive impact on students because students look enthusiastic and active during learning activities (Lasari et al., 2021). Thus, the activeness and concept understanding will be increased so that a good learning outcome is obtained.

The success of the learning process is related to student learning outcome because it is an indicator of the achievement of students' success in participating in learning (Tarigan et al., 2021). Learning outcome can be defined as a thing that is obtained by someone after carrying out learning. Another opinion says that learning outcome are answers that explain things that must be known, understood, and can be done by students after completing the learning process (Aziz et al., 2012).

There have been many scientists who have conducted research related to the implementation of the Think Pair Share. Several researches were carried out by applying the Think Pair Share learning model to improve activeness and concepts understanding (Farida, 2012; Fitriani, 2014; Oktapia et al., 2020), to increase activeness and learning outcome (Sari & Kusmanto, 2014), only increase learning outcome (Ihsan, 2020), or only concept understanding (Lestari & Luritawaty, 2021). Based on those researches, there are still limited studies about the implementation of Think Pair Share learning model to increase three variables during PTMT, namely activeness, concept understanding, and learning outcome. From the things that have been described, the researchers wants to try to conduct classroom action research which is expected to have a positive influence on all matters relating to activeness, concept understanding, and student learning outcome during PTMT.

Method

This classroom action research uses a research design formed by Kemmis and McTaggart (1988). The method of data collection was carried out using observation sheets, tests, and documentation with a qualitative approach. This research was conducted in a public junior high school at Pasuruan, Indonesia start on 13 September 2021 until 01 October 2021. The research subjects were 16 students of grade 8.

The criteria for success in this classroom action research are grouped into two forms,

namely process success and product success. Process success criteria in this research are said to be sufficient if students have a significant increase in activeness obtained from the results of the observation sheet instrument (Table 1). Product success criteria include increasing students' understanding of concepts (Table 2) and learning outcome obtained from the assessment instrument. The criteria for the success of a person's interpersonal intelligence is said to be high if it reaches a score of 70-90 (Safaria, 2005). In this case, the researchers took a value of 78 from the range of scores because the score of 78 corresponds to the KKM score (*Kriteria Ketuntasan Minimal*) of mathematics at the school of research place.

Table 1. Activeness Indicator

Sub Aspect	Indicator
Activeness Element	Actively asking/responding during learning activities
	Demonstrate good performance (as a team or individually)
	Have the motivation to try to solve the problem
	Dare to give affirmations to own team / respond to the work of other teams

Table 2. Concept Understanding Indicator

Sub Aspect	Indicator
Element of Concept Understanding	Restate a concept by selecting a specific procedure or operation
	Classify objects to specific characteristics according to their concepts
	Present concepts in various forms of mathematical representations
	Develop the necessary terms or specific terms of a concept
	Apply concepts to solve a problem

Result

The result showed that the implementation of the Think Pair Share model in Cycle 1 through Cycle 2 increased the activeness, concept understanding, and learning outcome. Figure 1 presents the answers of observation sheet and documentation by 16 students. While Figure 2 presents the answer of test mathematics and documentation. Data were collected during the learning process. The increase of students' activeness during PTMT can be seen in Figure 1.

Figure 1 shows that student activity increase from 45% in Cycle 1 to 82.5 % in Cycle 2. Figure 1 at the first indicator showed that students actively in asking or responding during learning activities increase from 40 % to 80 %. Indicators demonstrate performance (team or individually) by 50% to 80%. Indicators have the motivation to try to solve the problem by 50% to 100%. Then, dare to give affirmations to own team/respond to the work of other teams initially by 40% to 70%.

Based on Figure 2, students' concept understanding increased from 56 % to 88 %. student could estate a concept by selecting a specific procedure or operation increased

from 60% to 90%. Second, a student could classify objects to specific characteristics according to their concepts increased from 60% to 100%. The third indicator, students capable to present concepts in various forms of mathematical representations increased from 50% to 80%. Then, a student could develop the necessary terms or specific terms of a concept also increased from 50% to 90%. The last, a student can apply concepts of mathematics to solve the problems increased from 60% to 80%.

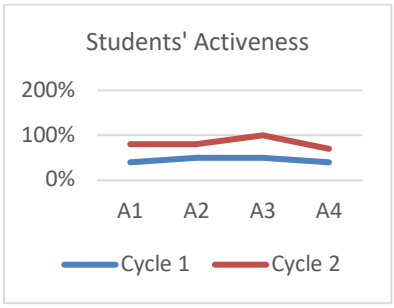

Figure 1. Students' Activeness

Information:
A1: Actively asking or responding during learning activities
A2: Demonstrate performance (team or individually)
A3: Have the motivation to try to solve the problem
A4: Dare to give affirmations to own team/respond to the work of other teams

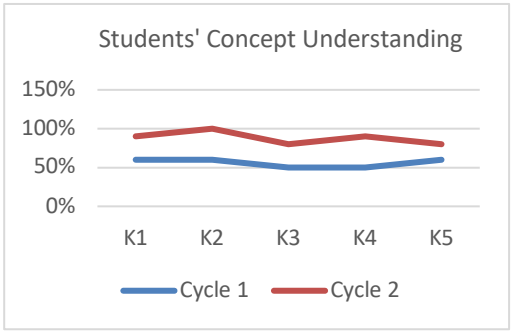

Figure 2. Students' Concept Understanding

Information:
K1: Restate a concept by choosing a particular procedure or operation
K2: Classify objects according to certain properties according to the concept
K3: Presenting concepts in various forms of mathematical representation
K4: Develop necessary or sufficient conditions of a concept
K5: Applying concepts to problem-solving

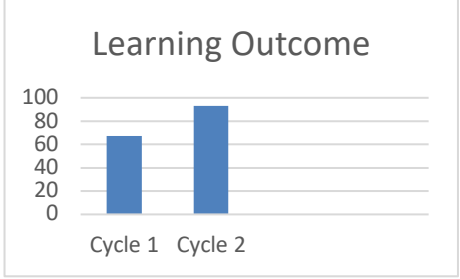

Figure 3. Learning Outcome

Figure 3 showed the results in Cycle 1 are seen from the work on the function relationship test with an average score of 67. That is obtained from the process of discussion and presentation of students is less effective, resulting in concept understanding. Then in Cycle 2, it increased to 93.2. Students are more serious and active to ask questions about things that are not understood so that when they work on problems get maximum results.

Discussion

This research consists of planning, implementation, observation, and reflection. The planning process consists of making lesson plan with relationship and function materials. The media used are buffalo paper, observation sheet of activeness, concepts understanding, and student's test results sheet. Learning begins by providing apperception, explanation of the material, and some questions, that students do the thought process. The next process is a discussion between friends with each other in teams. Each student expresses their opinions. The results of the discussion are presented in front of the class by each delegation team.

Observation of student learning activities in the first cycle showed that some students were still confused about learning with the TPS model. Students feel they are still adjusting to PTMT due to the limitations of socializing with other students. In addition, time conditioning is not efficient for teachers so that some teams have not carried out presentations. The other team is also still busy with their teams to discuss and not listen to the explanation of the team in front, so they no ask questions. At the end of the meeting, the teacher gives the question as an exercise. Some of the results of students' work are still incomplete so that the average grade is still low. Therefore, this first cycle has not been optimized.

Improvements in learning management are done by teachers from time management to technical implementation learning. In Cycle 2, students can adjust to the Think Pair Share, seen when they directly have discussions and optimize the time given by the teacher. The teacher also gave a buffalo paper to write the results of the discussion. The discussion ran smoothly and on time. Presentation activities have also begun to be active and students dominate the learning process. There are show a good understanding of the concept and satisfactory student test results. After all stages of Think Pair Share have been run in cycles I and II, the results showed an enhancement, then the action is solved until Cycle 2.

The results of the study in Cycle 1 to Cycle 2 showed an increase in student activity, from indicator actively asking or responding during learning activities active by 40% to 80%. Indicators demonstrate performance (team or individually) by 50% to 80%. Indicators have the motivation to try to solve the problem by 50% to 100%. Then, dare to give affirmations to own team / respond to the work of other teams initially by 40% to

70%. So that overall students activeness increased from 45% to 82.5%. The activeness of students is dominated by desires and awareness of the importance of a lesson. The motivation appears from the inside of students to get involved and from the outside, that is the application of models and media by teachers (Tembang et al., 2018). Students' curiosity begins when some of them ask questions in the middle of a team discussion.

In Cycle 2 it is also obtained that as many as 88% of students can solve the problem systematically. That is, concept understanding was increased when using the TPS model. It can be seen in Figure 2 that the first indicator express that student could estate a concept by selecting a specific procedure or operation increased from 60% to 90%. Second, a student could classify objects to specific characteristics according to their concepts increased from 60% to 100%. The third indicator, students capable to present concepts in various forms of mathematical representations increased from 50% to 80%. Then, students could develop the necessary terms or specific terms of a concept also increased from 50% to 90%. The last, students can apply concepts of mathematics to solve the problems increased from 60% to 80%. So that overall indicators of concept understanding increased from 56% to 88%.

Students learning results in Cycle 1 are seen from the work on the function relationship test with an average score of 67. That is obtained from the process of discussion and presentation of students is less effective, resulting in concept understanding. Then in Cycle 2, it increased to 93.2. Students are more serious and active to ask questions about things that are not understood so that when they work on problems get maximum results. It can be seen in Figure 1, Figure 2, and Figure 3 that learning during using the Think Pair Share can increase students' activeness, so students will have a good understanding of mathematical concepts. A good understanding of concepts also affects the improvement of student learning outcome. So that between activeness, concept understanding, and student learning outcome mutually influence each other. Learning with Think Pair Share provides a chance for students to think, answer, respond and help each other (Asniwati et al., 2018).

Implementation of Think Pair Share needs to pay attention to several things, such as time management, starting from the explanation of the learning process, student thinking activities, discussion in pairs/teams, and sharing the results with other students. Then, it can be concluded that the interactive and cooperative model of Think Pair Share can make students active when learning which was originally online becomes PTMT. Hence, the implementation of the Think Pair Share during PTMT can increase students activeness, concept understanding, and learning outcome.

Conclusion

Classroom action research using Think Pair Share is an alternative solution in learning mathematics during PTMT. The implementation of Think Pair Share during

PTMT can increase students' activeness which affects the understanding of the concept. The increase activeness with Think Pair Share shows that the percentage which was originally 45% in Cycle 1 increased to 82.5% in Cycle 2. This students' activeness also increases the understanding of concepts, from 56% in Cycle 1 to 88% in Cycle 2. Students who have a good understanding of the concept will have good learning outcomes as well. Hence, by applying Think Pair Share during PTMT it proves that students' activeness, concept understanding, and learning outcomes increase significantly.

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