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THE INFLUENCE OF THINK PAIR SHAR E LEARNING MODEL ON VOLUME DETERMINATION ABILITY BEAMS AND CUBE IN CLASS V SDN STUDENTS 13 TELAGA BIRU, GORONTALO REGENCY

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ABSTRACT
The problem formulation of this research is "is there any influence of think pair share learning model on the ability to determine the volume of blocks and cubes in fifth grade students of SDN 13 Telaga Biru, Gorontalo Regency. This study aims to describe the effect of the think pair share learning model on the ability to determine the volume of blocks and cubes in fifth grade students at SDN 13 Telaga Biru, Gorontalo Regency. This research method uses quantitative descriptive research in the form of one group pretest - posttest research. Sampling was done by using saturated sampling technique. The sample in this study amounted to 20 students. Data collection techniques include tests to determine the volume of blocks and cubes in this case through pretest and posttest. while observation and documentation as a complement. The data analysis technique used is test validity test, data normality test, and hypothesis testing.
The results of the study obtained $t_{arithmetic} = 3.91$ and $t_{table} = 2.09$ with a significance level of = 5%. and db = n-1. Because $t_{arithmetic}$ greater than t_{table} (3.91 > 2.09) then the result is significant. So that H_0 is rejected and H_a accepted. So it was concluded that there was an effect of the think pair share learning model on the ability to determine the volume of blocks and cubes in fifth grade students of SDN 13 Telaga Biru, Gorontalo Regency.

Keywords: think pair share model, ability to determine, volume of blocks and cubes.

PRELIMINARY

Today, mathematics is taught to meet the needs of industry, science, commerce, technology, and for all daily needs. Mathematics is a very important branch of science; therefore, mathematics is taught from elementary school to university level (at least as a general course). Until now, every year that is included in the list of subjects that are tested nationally, from elementary school to high school, one of them is mathematics.
Through learning mathematics gradually can develop the ability to think logically, analytically, systematically, critically and creatively. These various kinds of abilities must be developed as early as possible. Elementary school as one of the basic formal institutions under the auspices of the Ministry of National Education develops a basic mission in contributing to achieving national education goals.
Given the importance of learning mathematics for the development of generations, it should not be allowed to have students who are blind to mathematics. The success of students in mastering the basic concepts of mathematics will greatly determine their lives in society. Therefore, the teacher as a component has such a big task as a mediator in transferring knowledge. A teacher must be able to choose effective and efficient learning strategies so that teaching and learning activities can run well and can create good interactions for students.
Based on initial observations made to fifth grade students at SDN 13 Telaga Biru, it can be seen that student activity in the mathematics learning process is still lacking. This can be seen when the teacher is delivering learning material, some students just tell stories, play and disturb other friends. So that in understanding the material, especially determining the volume of blocks and cubes, there are still some students who cannot mention examples of the difference between blocks and cubes themselves and there are still students who do not know the formula for the volume of blocks and cubes themselves or in other words, mastery of the material

is still low. Not only that, there are problems when there are students who answer incorrectly or can't even answer the questions given by the teacher, other students cheer and mock and laugh at him. This shows that the student does not care about his friend. This is caused by the use of an unpleasant learning model.

Based on the description above, one of the learning strategies used in this problem is using the Think Pair Share (TPS) learning model. Think pair share cooperative learning model allows students to work independently and collaborate with others. This learning model can optimize student participation and can be applied to all subjects and grade levels. The learning model is assumed to be used in increasing the ability to determine the volume of cube and block material because it can motivate students to participate in learning and involve students actively in learning. By using this learning model students have individual and group responsibilities so that they will concentrate and be serious in participating in learning.

Learning using the think pair share learning model is very helpful for students in increasing interest in learning materials, because students in groups will be directly involved in learning. In addition, when one of the students in the group does not master the learning material, other students will help in understanding the material. So it is expected that fellow students in study groups who use the cooperative model can work together to improve the ability to determine the volume of cubes and blocks.

The Nature of Ability to Determine the Volume of Blocks and Cubes

Block and Cube volumes are included in the Mathematics subject matter for Grade 5 Elementary School. Here students are taught how to calculate the volume of blocks and cubes. In this material there are several materials that will be discussed, namely the concept and understanding of cubes, concepts and understanding of blocks, volumes of cubes and blocks, calculating the volume of cubes and blocks, formulas for calculating the volume of cubes and blocks, solving problems related to the volume of blocks and cubes.

Ability is the ability or potential of an individual to master expertise in performing or carrying out various tasks in a job or an assessment of one's actions.

Definition of Volumes. Volume means the content or size or number of objects in space. Theoretically, the notion of volume is the number of units of volume that fill the space. If the unit of volume is used, then calculating the volume means calculating how many sized cubes can fit or fit. (Soenarjo, 2008:111). Volume or it can also be called capacity is a calculation of how much space can be occupied in an object. The object can be a regular object or an irregular object. Regular objects such as cubes, blocks, cylinders, pyramids, cones, and spheres. Irregular objects such as stones found on the road. Volume is used to determine the density of an object. The unit of volume is m $^{3.}$ Other units that are widely used are liters and ml.

Definition of Blocks and Cubes

a. Beam

Beams are three-dimensional shapes formed by three pairs of squares or rectangles, with at least one pair of them being different sizes. A block has 6 sides, 12 edges and 8 corners.

A cuboid is a shape that is bounded by 6 rectangles, where each side of the rectangle coincides with exactly one side of the other rectangle and the adjacent rectangles are congruent. Build blocks also have provisions, namely; There are 6 sides, opposite sides of the same length have 12 edges, all angles are 90 degrees or right angles. The following is an example of a beam space model (Johnson & Neill, 2010: 184)

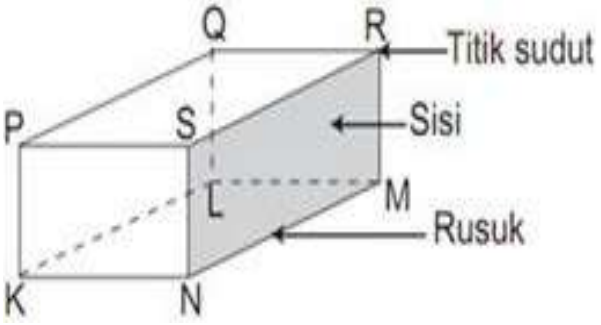
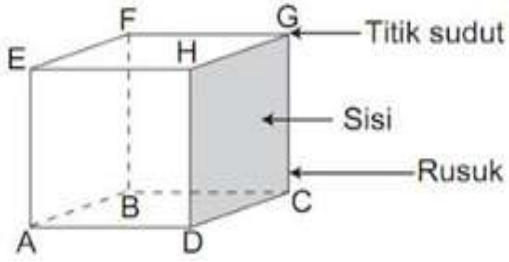


Figure 2.1 Beams

The following are the characteristics of the beam.
- The number of vertices ad 8 pieces.
- There are 12 ribs
- There are 6 square sides.

b. Cube

A cube is a space bounded by six quadrilaterals (like a dice). A cube is a shape bounded by 6 congruent square sides. Build a cube has the following conditions; There are 6 sides in the form of a square with each the same area, there are 12 edges with the same length, all angles are 90 degrees or right angles (Yuwono, 2005: 63).



Picture. 2.2 Cube

The following are some of the characteristics of a cube:
- Have the same length of ribs.
- The sides are square.
- There are 8 vertices.
- The number of edges is 12.
- There are 6 sides.

Volume formula of cubes and cubes

a. Block Volume

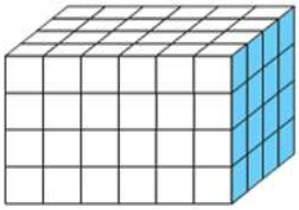
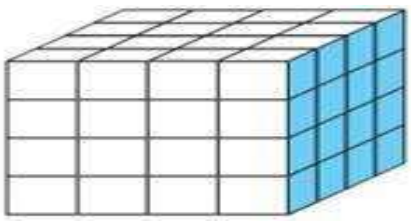


Fig.2.3 Block Volume

The stack of cubes above forms a block. The base of the block consists of 6 x 4 = 24 unit cubes. While the height of the block is 4 unit cubes. So the blocks above total 4 x 24 = 94 unit cubes. So if it is calculated then the volume of the block is 6 x 4 x 4 = 96 unit cubes. So, the volume of the cube can be found by calculating the volume of the cube = length x width x height. Where the length is symbolized by P, the width is symbolized by L, and the height is represented by T. Then the volume of the block is **V = P x L x T** .

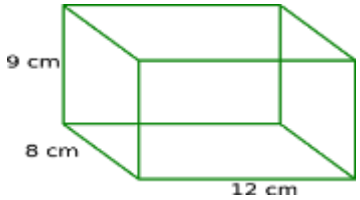
b. Cube volume



Picture. 2.4 Cube Volume

The stack of cubes on the side forms a new cube. The base of the cube on the side consists of 4 x 4 = 16 unit cubes. While the height of the cube on the side is 4 unit cubes. So the cube on the side consists of 4 x 16 = 64 unit cubes. So the volume of the cube on the side is 64 unit cubes.
The volume of the cube can be written as follows. Volume of the cube = 4 x 4 x 4 = 64 unit cubes. So, the volume of the cube can be found by calculating the volume of the cube = edge x edge x edge. If the length of the edges of the cube is expressed by s, the volume is: V = sxsx s.

The following is an example of determining the volume of a cuboid and a cube
1. Look at the picture of the block below.



The volume of the block above is...
2.A cube has a side length of 5 cm. Determine the volume of the cube.

Solution :
1. Length = 12 cm
Width = 8 cm
Height = 9 cm
Volumes = …..?
V= PxWxT
12 cm x 8 cm x 9 cm = 8 864 cm^3
So the volume of the block is 8864 cm^3
2. The length of the side of the cube = 5 cm.
Volume of cube = sxsxs
= 5 5 5
= 125
So, the volume of the cube is 125

The essence of the Think Pair Share Learning Model
Definition of Learning Model
Teaching and learning activities are carried out by two actors, namely a teacher and students. The behavior of the teacher as a teacher or who teaches the material, while students are learning or students. The teaching and learning behavior is related to learning. Good learning and running effectively if the learning uses a learning model that will later support the teaching and learning process. The use of innovative learning models can make learning not boring for students and make it easier for students to understand the material being taught. The learning model is a design or pattern that is used when learning will be carried out and will later regulate the course of learning as planned.
Learning activities, in their implementation, recognize many terms to describe how the teacher will teach. Currently, there are so many kinds of strategies and learning methods that aim to improve the quality of learning for the better. The terms models, approaches, strategies, methods, techniques, and tactics are familiar in our world of learning, the Indonesian people, as well as experts, they have their own meanings about these terms.
According to Sagala that: "the term model can be understood as a conceptual framework that is used as a guide in carrying out an activity." (Fathurrohman, 2015: 194). The learning model can also be understood as a type, a description to help the visualization process that cannot be observed directly, the model is also a system of assumptions used to systematically describe an event (Fahrurrohman, 2015:194). Joyce & Weil argues that:

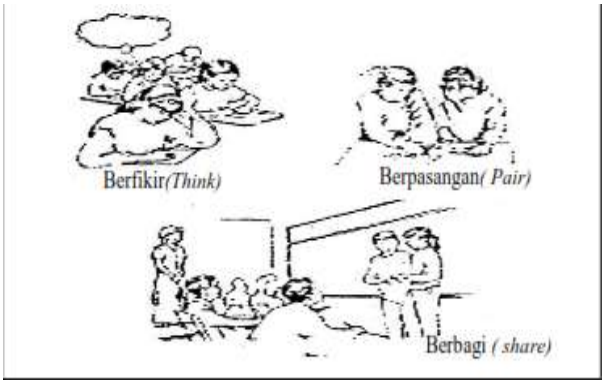
"a learning model is a plan or pattern that can be used to form a curriculum (long-term learning plan), design learning materials, and guide learning in the classroom or otherwise. (Rusman, 2014:132).
More concretely it can be stated that the learning model is a series of learning activities/concepts that are typically presented by the teacher to support effective learning and are more conducive to achieving certain learning objectives and as a guide for teachers in designing learning. The learning model can be used as an option, meaning that the teacher may choose an appropriate and efficient learning model to achieve learning objectives. This is done to create a supportive atmosphere so that students feel free to respond naturally and regularly, and learning objectives can be achieved properly. For this reason, the selection of learning models must be in accordance with the teaching materials and student characteristics.

Definition of think pair share

The Think Pair Share (TPS) learning model is a model introduced by Frank Lyman in 1985 at the University of Maryland. Think Pair Share (TPS), grew out of cooperative learning research. This is an effective way to change the pattern of discussion in class. This model has an explicitly defined procedure to give students time to think, answer and help each other. Now the teacher wants students to think more deeply about what has been explained. So the think pair share (TPS) learning model was chosen instead of asking questions in class, assuming that all discussions require rules to control the class as a whole. The procedure used in Think Pair Share can give students more time to think, respond and help each other. Think Pair Share is a simple cooperative learning model that provides opportunities for students to work alone and collaborate with others. Thus, the think pair share learning model is one type of cooperative learning that allows students to think and share in pairs about a subject matter. This learning model gives students plenty of time to think, respond, and help each other.

The steps of the Think Pair Share (TPS) learning model

According to Huda (Faturrohman, 2015:362) the learning steps using the think pair share model are as follows:
Stage 1: Thinking (thinking), the teacher asks questions or issues related to the lesson then students are asked to think about the question or issue independently for a few moments.
Stage 2: Pairing, the teacher asks students to pair up with other students to discuss what they have been thinking in the first stage. Interaction at this stage is expected to share answers if a question or idea has been asked, if a specific problem has been identified. Usually the teacher gives 4-5 minutes to pair up.
Stage 3 ; Sharing , the teacher asks pairs of students to share with the whole class what they have talked about. This is effective if done by taking turns pair by pair and continued until about a quarter of the total number of pairs have had a chance to report the results of their discussions.



Picture. 2. 5 Think pair share

Meanwhile, according to Frank Lyman 1985 (Aqib, 2015:24) the learning steps include the following:
1. The teacher conveys the core material and competencies to be achieved.
2. Students are asked to think about the material/problem presented by the teacher.
3. Students are asked to pair up with their friends and share their thoughts with each other.
4. The teacher leads a small plenary discussion, each group presents the results of their discussion.

5. Starting from these activities, directing the conversation to the subject matter and adding material that has not been disclosed by the students.
6. The teacher concludes.
7. Closing.

Advantages of Think Pair Share (TPS) model

Using the model has many advantages that will make it easier for teachers to carry out effective learning. The advantages of this model according to Kurniasih & Sani (2016:58) are as follows,

1. This model by itself provides many opportunities for students to think, answer, and help each other.
2. Can increase student participation in the learning process.
3. More opportunities for each group member's contribution.
4. There is ease of interaction among students.
5. It's easier and faster to form groups.
6. Between fellow students can learn from other students and convey their ideas to each other to be discussed before being presented in front of the class.
7. Can improve self-confidence and all students are given the opportunity to participate in class.
8. Students can develop thinking and answering skills in communicating with one another, and working to help each other in small groups.
9. Problem solving can be done directly, and students can understand a material in groups and help each other, make conclusions (discussion) and present in front of the class as one of the evaluation steps of the learning activities that have been carried out.
10. Allows students to formulate and ask questions about the material being taught because they indirectly get examples of questions posed by the teacher, and have the opportunity to think about the material being taught.

Weaknesses of the Think Pair Share (TPS) learning model

Although this model has many advantages, it also has drawbacks. The weaknesses of this model include,

1. Requires simultaneous coordination of various activities.
2. Requires special attention in the use of the classroom.
3. Switching from whole class to group can take up valuable teaching time. For this reason, teachers must be able to make careful planning so as to minimize the amount of time wasted.
4. Many groups report and need to be monitored.
5. Fewer ideas emerge.
6. If there is a dispute, there is no mediator.
7. Depending on the partner.
8. The odd number of students has an impact on group formation, because there is one student who does not have a partner.
9. Mismatch between the planned time and its implementation.
10. Think pair share learning method has not been widely applied in schools.

Application of Think Pair Share Learning Model in Determining the Volume of Blocks and Cubes

The volume of blocks and cubes is a subject matter that most students have difficulty in determining the volume of the blocks and cubes. The application of the think pair share learning model is expected to assist students in solving problems related to the material.

For example, the teacher shows an object in the form of a block that is known to have a beam length of 35 cm, width 34 cm, and height 36 cm. With the problem given by the teacher, then students are asked to pair up to find answers to the problem.

In the preparation stage, the teacher first designs activities by making activity sheets and answer sheets that students will learn. After that, the teacher assigns students to groups consisting of 4-6 students consisting of high, medium and low students with learning achievement and must also consider other heterogeneity criteria, namely gender, social background, fun and so on. To determine the number of groups to be formed, it can be done by dividing students into classes with 4 or 6 students according to the desired number of members of

each group. The thing to remember is that teachers must rank students based on their academic achievements in class because each group must consist of students with balanced achievements. In addition, the teacher must also determine the initial average score of students individually to see an increase in their achievement.

At the preparation stage the teacher also needs to introduce and explain about Think Pair Share learning, while the basic rules are that students stay in groups, ask a question to the group before asking questions to the teacher, provide feedback on ideas, and avoid criticizing members in the group. . In addition to the basic rules, the teacher also explains to students that students have a responsibility to ensure that their group mates have mastered the assigned material, no student has finished studying before all group members have mastered the assigned material. Furthermore, the teacher conveys the objectives of learning and motivates students to learn to work together and be serious in carrying out group assignments.

The next stage is the implementation stage of learning,

1) The teacher asks questions related to the material to be delivered and students pay attention or listen actively to explanations and questions from the teacher. Teachers must be able to develop subject matter according to what students will learn in groups.
2) Students think individually; the teacher gives students the opportunity to think about the answers to the problems presented by the teacher for about 4-5 minutes. This step can be developed by asking students to write down the results of their respective thoughts.
3) In pairs, each student discusses the results of their respective thoughts with a partner (group in pairs). The teacher organizes students into pairs and gives students the opportunity to discuss the answers that they think are the most correct or convincing, the teacher motivates students to be active in group work. After that, students have the opportunity to share their work with the group and discuss the results of their group work to be reported. This implementation can be completed with LKS as a worksheet, a collection of practice questions or questions that are done in groups.
4) Sharing, students share their answers with the rest of the class. This is done by the teacher making a small plenary session for discussion, and the teacher as the leader. Then each group presents the answers or the results of the discussion. And other students/other groups, are given the opportunity to ask questions or provide opinions on the results of the group discussion. After that, the teacher helps students to reflect on the results of problem solving that they have discussed, and gives praise (reward) for groups that do well and gives encouragement to groups that have not done well. The last stage is closing, with the guidance of the teacher the students make conclusions from the material that has been discussed, then the teacher provides an evaluation or independent practice question.

Through Think Pair Share students work in a team to solve a problem, complete a task or do something together, this type has the privilege of being able to develop their own individual abilities by sharing ideas/ideas within groups and between groups, this type can also improve ability to work together in groups. With this description, it shows the influence of the think pair share learning model on the ability to determine the volume of blocks and cubes in students.

RESEARCH METHODS

The research design or model used in this study is a one group pretest – posttest design . This research design is usually to measure the pure effect of a treatment by forming two ways, namely by means of pretest and posttest. The design of this study is described as follows.

$$\mathbf{O_1 X O_2}$$

Picture. 3.1 one group pretest – posttest design.

Information

O_1 : pretest given before teaching and learning activities

X : giving think pair share model

O_2 : posttest given after learning activities for

The type of research used in this research is experimental research. This study seeks to examine whether there is a causal relationship between the treatment given and the resulting impact. The research was conducted by comparing one or more applied variables. In this study, there are two variables, namely the X variable of the Think Pair Share Learning model and the Y variable determining the volume of blocks and cubes. The

population in this study were all fifth grade students of SDN 13 Telaga Biru in the 2017/2018 school year. In this case the research sample technique uses a saturated sample. In this study, the test used to ability of students volume of beams and cubes are multiple choice. documentation to collect student work in the form of pretest and posttest questions. Observation according to Sugiyono (2016: 203) is used if the research is related to human behavior, work processes, natural phenomena and if the observed respondents are not too large. Data analysis in this study used descriptive analysis. The purpose of using this descriptive analysis is to find out whether there are differences in the ability to determine volume in the group of students by applying the think pair share model with groups of students who do not apply the model to the fifth grade students of SDN 13 Telaga Biru with block and cube volume material.

RESEARCH RESULTS AND DISCUSSION

This research is an experimental study with the aim of knowing the effect of the think pair share learning model. This research was conducted at SDN 13 Telaga Biru, Gorontalo district, in class V. The number of research samples was 20 students who were in one class. The research design used is a one group pretest-posttest design.

This research is a quasi- experimental research. because this study aims to determine the cause and effect and how big the effect of the cause and effect by giving certain treatment to the class. The procedure that researchers carried out in this study was to provide teaching using the think pair share learning model to determine the effect on students' ability to determine the volume of blocks and cubes.

In the first meeting, the researcher explained the teaching materials related to the subject of determining students' abilities in determining the volume of blocks and cubes, in this case the researcher explained the material conventionally without any treatment or learning models, students were distributed material and the researcher only explained the points on the material. Next, the researcher distributed questions to students to work on and collected according to the agreement.

At the second meeting the researchers explained the material by using treatments or using a learning model, namely the think pair share model. Next, the researcher divides the students in pairs and is given the topic of the material which they will discuss with their partner. Then the researcher led a small plenary to present the material they had discussed. Furthermore, at this meeting the researchers gave posttest questions to students to measure their ability to determine the volume of blocks and cubes after using the think pair share model.

The research data was collected twice, which included a pretest before using the think pair share model and a posttest after using the think pair share model. The research data that the researchers obtained after the data collection process were both pretest and posttest data. Through Think Pair Share students work in a team to solve a problem, complete a task or do something together, this type has the privilege of being able to develop their own individual abilities by sharing ideas/ideas within groups and between groups, this type can also improve ability to work together in groups.

Based on data presentation and data analysis related to research, the results show that the data is normally distributed. Furthermore, the data were analyzed using the t test. Based on the calculation of the t test, the results show that there is a significant difference between t_{count} and $t_{table.}$ The t_{count} obtained from calculations using Microsoft Excel is 3.91 while the $t_{table\ is}$ 2.09 at the significance level = 5%. So it was concluded that there was an effect of the think pair share learning model on the students' ability to determine the volume of blocks and cubes in class V students of SDN 13 Telaga Biru. This shows that the ability of students to determine the volume of blocks and the volume of cubes applied by the think pair share learning model is quite satisfactory when compared to the ability of students to determine the volume of blocks and the volume of cubes in students who use conventional learning. This is evidenced by the average value obtained at the end of the treatment, which is 73.21 for the posttest.

Because the ability of students to determine the volume of blocks and cubes in class V students and the average score on the pretest questions with the think pair share learning model is higher than conventional learning, learning with the think pair share learning model can be used as an alternative in teaching, especially the material. determine the volume of blocks and cubes for class V students. The think pair share learning model is in accordance with the characteristics of students as Kurniasih & Sani (2016;58) state that using the think pair share learning model or exchanging pairs is a learning technique that gives students the opportunity to

think, answer and work together with others. This technique can be used in all subjects and for all age levels of students.

Therefore, the use of think pair share learning models that are in accordance with the characteristics of students can have a significant influence on the ability to determine the volume of blocks and cubes in fifth grade students of SDN 13 Telaga Biru, Gorontalo Regency.

CONCLUSION

Based on the results of research and discussion is concluded that there are significant learning model Think Pair share of the ability volume of beams and cubes in the fifth grade students of SDN 13 Telaga Biru. This is evidenced by the calculation of the hypothesis using a t-test with a significant level of = 0.05, the value of $t_{table} = 2.09$ and Tcount = 3.91. from these results it is clear that the value of Tcount > the value of Ttable then H0 is rejected and Ha is accepted.

SUGGESTION

Based on the conclusions that have been described, there are several suggestions that can be put forward by researchers, including:

1. For students, the think pair share learning model can be applied to improve student learning outcomes and to provide meaningful learning for students according to the real world context.
2. For teachers, the use of think pair share learning model can be used as an alternative to provide variety in the learning process.
3. For schools, schools should seek training for teachers to support the implementation of learning so that learning objectives can be achieved in accordance with expectations.
4. For advanced researchers, who want to use the think pair share learning model, it can be followed up in the next research, taking into account the allocation of time, facilities, and the characteristics of students in the school.

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