

BALBAN: Students' creative thinking ability on think pair share learning model assisted BALBAN (comparison blocks)

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KEYWORDS

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ABSTRACT Equipping students with the ability to think creatively is one of the goals of mathematics. Creative thinking needs to be developed. This research aims to see whether there are differences in the ability to think creatively between think pairs sharing cooperative learning using BALBAN (comparison blocks) and direct learning. This quantitative research type uses data collection methods: observation, post-test, interviews, and documentation, to see the accuracy and validity of the data to measure with field results. In this case, the research method uses a static group comparison design. The quantitative research sample comprised 26 students. The results show a difference between think-pair cooperative learning using the BALBAN (comparison block) and direct learning.

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1. INTRODUCTION

Mathematics has a significant role in various aspects (Pre-vost et al., 2021), such as improving students' thinking skills and scientific disciplines (Breda, 2018). The quality of education can be seen from the successful interaction of students and teachers in teaching mathematical concepts and understanding the material in their environment. In this case, students are expected to have critical and creative characteristics (Sunzuma & Maharaj, 2021). Mathematics and creative thinking already become a unified realm in education (Pardi Amin & Widodo, 2021, 2017). Using inappropriate and less varied learning models is one factor that results in not optimal learning (de Kamps et al., 2014; Frassia, 2017). The reasons are many, but include a lack of time and resources on the instructor's side and a lack of information about the various methods of learning mathematics that might be applied (?). In the research that will be carried out, researchers will use a learning model. The learning model has many types of abilities to overcome problems in learning mathematics. Researchers used cooperative think pair share types. Think pair share is learning by discussing and exchanging opinions between one group and another to create a pleasant learning atmosphere (Bossé et al., 2013; Manganyana, 2020).

A field survey conducted has shown that students at Ma'arif 1 Metro Middle School have low learning outcomes. Due to the teacher's busyness, the learning system in class often uses the assignment method, and the learning model used is direct learning. The assignment meant here is that students are given several questions and then work on them independently or in groups. This impacts the

achievement of student learning outcomes in that mathematics learning does not only use direct learning but can use learning media and activate students through cooperative learning models (TPS) to communicate with each other and share ideas. Learning on comparative teacher material has never used the cooperative model (TPS), which is assisted with learning media. Therefore, a learning strategy or model must be implemented to increase activity and is expected to promote the memory of the learning material.

Previous research revealed that today mathematics is not a scary lesson, but a delightful lesson with learning media that make students easy to understand mathematics more interactive (Utomo et al., 2023). Another opinion is that using the cooperative model (TPS) has a better impact on students and provides more time for students to think (Björn et al., 2015; Hartini et al., 2016), respond (Bambang, 2021; Huincahue et al., 2022), and share ideas so that cooperative learning can grow effectively to improve the learning outcomes that are revealed (Abdurahman, 2020; Baiduri et al., 2017). Using the cooperative learning model (TPS) increased student understanding of the concept, with an average student response value of 41.8 opinions expressed. Of course, not only using learning media but collaborating with learning models will be more effective and efficient in the learning process. A teacher, especially in mathematics, must have creative ideas that create a more pleasant teaching and learning atmosphere for students. So researchers get an idea by using props. The linkage of the obstacles teachers face with this research is the lack of learning media. In this case, the researcher will create and experiment with a teaching aid that supports the visual aid. The teach-

TABLE 1. Validity Test Results

No	Expert	Expert	Expert	Σ			
Question	1	2	3	S	n(c-1)	v	Category
1-5	25	25	20	55	60	0.91	Tall

ing aid is called BALBAN (comparison beam). To achieve an effective and efficient learning process using research methods, a teacher must pay attention to the creative thinking of each student.

Based on previous research, no one has integrated the cooperative learning model (TPS) with the BALBAN (comparison block). Based on this description, the researcher assumes that using the think pair share cooperative learning model assisted by BALBAN visual aids (comparison blocks) can increase the creativity of low students.

In Indonesia, labor absorption in the agricultural sector ranks second, namely 34.6% to 40% (the average in 2005-2015) of the total workforce, while the rest work in the non-agricultural sector. The agricultural sector serves as the basis or foundation for economic development because it carry out a extremely significant role in the Indonesian economy. It requires the limitation of the conversion rate on agricultural land by calculating the economic value of rice fields as an employment service provider for farmers using the economic valuation method of rice fields, learning mathematics to improve student learning outcomes on integral material. So this research aims to develop e-learning based on moodle to improve student learning outcomes in mathematics learning.

2. METHOD

The research used is quantitative; this research methodology is quasi-experimental with a Static Group Comparison design, implying that sample sizes from two classes are used to conduct research. In this research, two classes were formed, one control class group and one experimental class group.

All population is seventh-grade students at Junior High School Ma'arif 5 Metro. The research sample consisted of two classes, namely Class Seven A, with 26 students, and class seven B, with 22 students. Class seven A was the experimental group that received the BALBAN teaching aid as a part of the Think Pair Share learning strategy. The control group was the seventh-grade B, who did not receive treatment or use direct instruction. The test instrument used was a question sheet describing the ability to think creatively after receiving treatment. The questions given contain comparisons of value and value with a total of 5 questions. Then a calculation is carried out after fulfilling the requirements for normality and homogeneity with a significance level of 5%. Testing the hypothesis in this research is a two-class t-test to determine whether there is a difference between the control and experimental classes in students' creative thinking abilities.

3. RESULTS AND DISCUSSION

3.1 Study Result

Before conducting research, all data needs first tested the validity and reliability. The results of the validity test and reliability test can be seen in the following table 1:

The validity results reach 0.91 where the instrument is valid. The reliability results obtained α is 0.80. This means that the instrument is reliable.

Normality and homogeneity tests were carried out as a requirement before the hypothesis was tested. At a significance level of 5%, the normality test was used to show that the research results were normally distributed. The post-test data normality test L count results do not exceed the L-table, so the post-test value data is normally distributed. There is also a homogeneity test in research using the Levene test. The following are the results of the Levene test data is sig. = 0.094. Then the value is greater than the pre-determined alpha value of 0.05, so it can be decided that the population variance is homogeneous.

The hypothesis test shows that the t-test for two independent samples has a sig (2-tailed) value of 0.000, smaller than the assumed alpha value of 0.05. This shows that when comparing students taught directly with those taught through the Think Pair Share cooperative learning paradigm assisted by learning media, there is a significant difference in the ability to think creatively in both groups. In the t-test hypothesis test, two independent samples, the ability to think creatively arithmetic of 4.47 then comparing the arithmetic with t table obtained $4.47 > 1.68$ then, H_0 is rejected and H_1 is accepted, meaning that the creative thinking abilities of the experimental class students are better than the control class.

3.2 Discussion

Before conducting the research, the researcher designed cooperative learning (TPS), which was supported by visual aids through making lesson plans. In implementing the learning in the lesson plan, the researcher conducted the research in 6 meetings. At the first, second, and third meetings, the four researchers introduced the learning model cooperative (TPS) assisted by a BALBAN. Then at the fifth meeting, they practiced. During the final meeting, the researchers gave a post-test to understand the students' learning outcomes after the treatment was given to them.

Applying the media-assisted cooperative learning model (TPS) makes students active and enthusiastic and helps each other between group mates when something is not understood and is proven to increase students' understanding of the material presented. Learning through a learning model accompanied by props gives a more meaningful impression so students can understand the material well.

In the comparison material of equal and reversed values, the students in the picture above represent each group to practice them (Kusuma & Hamidah, 2019; Partono et al., 2021). After that, the students get one question to discuss with each group. Then representatives of students come forward to explain the results of the answers that have been discussed.

In the learning process carried out with a learning model assisted by carried out by researchers, there are ad-

vantages and disadvantages in its application. The advantages include that students can understand the material well. The drawbacks include that the plan cannot carry out the ongoing learning process because it is constrained by time. The solution carried out by the research is to continue discussing material that has not been completed at the next meeting in order to maximize student understanding.

This study obtained the t-test results of two independent samples, t-count 4.47 and t table 1.68. The t-test results are also obtained based on the test criteria because t-count > t-table. This shows that H_0 is rejected and H_1 is accepted, meaning there are significant differences in creative thinking skills between students taught using learning models supported by visual aids and direct learning. The findings of this study corroborate other studies, such as Ni Komang Yunita Dewi, who found that students given a learning model appear different from those who use direct learning (?).

According to (Rizqi et al., 2023), inadequate quality of the educational process and student learning outcomes is one of the problems affecting the world of education today. The inability of students to participate actively in their education is the cause of a lack of understanding of mathematical concepts in the long term (Pardiamin & Widodo, 2021). Thus the researcher will use a cooperative learning paradigm known as think pair share. According to Rusman, cooperation is a learning process involving students' active roles in groups to express their opinions to each other. Another opinion researched by Yalatifi Hia and Sri Wahyuni is that using the think pair share cooperative model has a better impact on students and provides more time for students to think, respond, and share ideas. Thus cooperative learning can grow effectively to improve learning outcomes.

4. CONCLUSION

In the comparison material of equal and reversed values, the students in the picture above represent each group to practice the. After that, the students get one question to discuss with each group. Then representatives of students come forward to explain the results of the answers that have been discussed

From the analysis of student data above, the t-test of two independent samples shows differences through the cooperative learning model (TPS) supported by BALBAN learning media (comparison blocks) with direct learning on students' creative thinking abilities.

For suggestions from researchers so that readers can carry out even better research that can be based on student's knowledge related to students' creative thinking abilities through the think pair share cooperative model supported by equipment in other mathematical material.

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