THE EFFECT OF THE PAIR CHECK TYPE COOPERATIVE MODEL ON MATHEMATICS LEARNING OUTCOMES OF 5TH GRADE STUDENT

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Article Info	ABSTRACT
	This research purpose to determine the effect of the pair check type of cooperative learning model on the mathematics learning outcomes of fourth grade. This quantitative research of pre-experimental design that used in the form of a one group pretest post-test design. The population is all of the students in SDN Gunung Mulyo, Sedayu, Bantul. The sample in this study consisted in the entire class IV, with the generally 21 students. The date collection used a test and questionnaire method. The form of written test is a form of multiple choice, while the questionnaire to have a form a statement. The result of this study can be several conclusions, including: (1) the ability to understand the material before using the pair check type cooperative learning model in fourth grade students was generally categorized as moderate with the average score obtained by students is 62.6. (2) the ability to understand the material after using the pair check type cooperative learning model in fourth grade students was generally categorized as capable, this is evidenced by the average score obtained by students, which is 92.2. (3) the value of learning mathematics on the subject for fourth grade students showed that the significant value of 0,000. The significant value indicates $0,000 < 0.05$ so H_0 is rejected and H_1 is accepted, which means that the significant value when used of the pair check type cooperative learning model on the fourth-grade students mathematics learning outcomes at SDN Gunung Mulyo, Sedayu, Bantul.

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1. INTRODUCTION

Everyone has abilities and skills according to the level of education he attends, the higher a person's education, it can be concluded that the higher the knowledge, skills, and abilities. This illustrates that education has a function that can be used to improve welfare, because an educated person can avoid stupidity (Pujani, 2022). Education is a process of influencing students, which allows them to familiarize themselves as much as possible with the environment around them, thus changing people's lives (Chen, 2020; Zou, 2021). So it can be concluded that education is one of the processes to influence students in terms of adapting themselves to the surrounding environment as well as possible, from this it can cause changes from themselves in social life in society. The purpose of education is to foster and direct teacher activities to select and determine the

methods used in the teaching process or provide a comfortable learning environment for students to (Okubo et al., 2012).” Education has a very important role to play in creating quality human resources (HR). and spiritual values. ”Based on these principles, it is hoped that learning in schools will equip students with the ability to think logically, analytically, systematically, critically, creatively and cooperatively from an early age (Turyati, Hartati, & Nugraheni, 2020).

Based on the results of research conducted in Indonesia, it was found that the level of students' mathematical abilities at all levels was still in the range of 34%, from the results of this percentage it was clear that this was very concerning. Mathematics is one of the subjects that is difficult, confusing, even a subject that is very frightening for some people, according to the public's response, especially students. One of them is at Gunung Mulyo Elementary School, Sedayu, Bantul, the results of observations from a study conducted on February 10, 2022 in learning mathematics, the method used by teachers when delivering material using the most common method is lecturing. In learning using the lecture method, during the learning process in the classroom the teacher is more active than the students. So that students become passive and have difficulty in accepting the material that has been delivered by the teacher. Here the role of the teacher feels that he has failed in conveying knowledge and ultimately harms students. Even though the role of the teacher in providing useful knowledge and of course easily understood by students is very important. This means that the method used cannot be used properly by the teacher as a motivational and extrinsic tool in carrying out the teaching and learning process (Arifmiboy, Jamna, Iswari, & Agustina, 2018).

Based on Abenir & Hok Ka (2020), is ”an activity that involves mental/psychic, which usually occurs in an active relationship with the surrounding environment, which can produce some changes in insight, skills, understanding and attitude values”. These changes are absolute and do not change and leave an impression. From the study formula, Darmiany et al. (2021), explained that: ”The result of the change can be a new result or it can be said as a complete form of the results that have been obtained. Forms of the main results as well as the results of side effects can be obtained from the learning outcomes. The method of the learner can take place fully consciously or it may not take place without awareness. Changes in learning from this cover various things that are closed, such as understanding and attitudes that cannot be observed directly, as well as changes that are open, such as telling stories using a foreign language that can be observed directly.

Learning is a process which is marked by a change in a person (Maulyda, Istiningsih, Hidayati, Apsari, & Asian, 2020). This change is based on learning outcomes shown in several ways such as changes in understanding, knowledge, attitudes and behavior, skills, dexterity and abilities and so on. Mathematics is a method of thinking and reasoning. James and james emphasized that mathematics is a science that examines reasoning regarding shape, quantity, composition, and concepts related to one thing to another in large numbers (Ainiyah, Istiningsih, & Mataram, 2021).

Satriami et al. (2021), states that the cooperative learning method is a learning model in which students study in the form of small groups with different levels of ability. In completing group assignment exercises, cooperation is needed and help understand an educational method. The learning process will not end if one of the friends in the group has not mastered the subject matter. The pair checks type is a learning method in which students pair up with each other and solve problems that are shared (Nyoman, Astuti, Setiawan, & Mataram, 2021). In the cooperative learning method of the pair checks type, the coach acts as a motivator and facilitator for student activities. This learning method also aims to develop students' social awareness, collaboration, and the ability to give awards. This method is intended to develop students' ability to express ideas, views, knowledge, and opinions appropriately. Learning outcomes are changes in student behavior because learning can create changes from bad to good in behavior and attitude. Changes in behavior from learning outcomes are changes seen in behavior related to learning objectives. Therefore, learning outcomes can be in the form of changes in cognitive abilities, which include knowledge and understanding, sensorimotor skills, including skills needed to know body attitudes in specific ways, and dynamic-affective abilities, which include values and attitudes (Ratnasari, Gunayasa, & Saputra, 2022).

Learning mathematics is said to be successful if students have the ability to solve problems, reasoning skills, understanding skills and other abilities that are used properly besides being able to take advantage of the benefits of learning mathematics in real life. To realize this, one of the solutions is to use a learning model that is certainly suitable and appropriate. Zulkha & Setyawan (2022), explains that the cooperative education model is a model of education in which students learn in small groups with varying levels of expertise. The cooperative education model also has various types, one of which is pair checks. While Herdian's opinion, The pair checks model (checking companion) is a learning model in which students work in pairs to solve

the problems given by the teacher (Juliansyah, 2021). According to researchers, this cooperative learning model is suitable for application to measurement material, because most students are often confused about the measurement material, which is one of the advantages of the pair checks cooperative education model, namely that teachers can train students to be more courageous. Based on the description above, the observer intends to conduct a research entitled "The Effect of the Pair Check Type Cooperative Learning Model on the Mathematics Learning Outcomes of Grade IV Students at SDN Gunung Mulyo, Sedayu, Bantul".

2. RESEARCH METHOD

The method used in this research is quantitative research using an experimental approach. The reason researchers use this approach is because in this research design, researchers can directly examine or control all external variables that can affect the course of the experiment. The population used as subjects or objects in this research were all students at SDN Gunung Mulyo, Sedayu, Bantul because the problems at this school were in accordance with the formulation of the problem in the research. In this study, the sample was fourth grade students with a total of 21 students at SDN Gunung Mulyo, Sedayu, Bantul.

Quantitative approaches are procedures used to test certain theoretical concepts by examining the relationships of various variables. These variables are often calculated using research instruments and finally the data including numbers can be analyzed based on statistical procedures. The final report of the research conducted is usually well structured starting from the introduction, literature review, theoretical background, research methodology, research results, and discussion (Cresswell, 2012).

There are several stages carried out by the researcher, including: (1) The initial test (pretest) administration stage which aims to find out the initial conditions that occur in the field regarding mastery of measurement material, (2) the stage of giving the treatment where the researcher used the pair check type cooperative learning model, (3) the stage of giving the final test called the posttest which aims to see how far the effect of giving treatment and before giving treatment.

The technique used by researchers to collect data in this study is to use test methods, questionnaires and documentation. According to Jennings (2018), "The test is a series of questions or exercises as well as other tools that are used as benchmarks to measure skills, intelligence knowledge, abilities or talents possessed by each individual or group". The test method used is to see if there is an increase in learning outcomes in learning mathematics after carrying out learning activities using the pair check cooperative learning model.

3. RESULT AND DISCUSSION

To find out the results obtained from this research, there is an explicit influence from the learning outcomes of fourth grade students at SDN Gunung Mulyo, Sedayu, Bantul on the material about measuring angles before using the pair check cooperative learning model and after using the pair check cooperative learning model.

Table 1. Summary of data value before and after using the learning model

Test Score	N	Total Score	Average
Pre-test	21	1316	62,6
Post-test	21	1936	92,2

To test whether the data was normal or not normal, the Shapiro-Wilk test was used using SPSS 24.0 for Windows. In this study, there were pre-test and post-test data on students which were then analyzed by the researcher. The results of the calculation of the pre-test and post-test data normality tests can be seen in the following table:

Table 2. Normality Test Using SPSS 24.0

	Test of Normality						
	Test	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	sig	Statistic	df	sig
Score	Pre-test	.181	21	.049	.931	21	.115
	Post-Test	.133	21	.200*	.927	21	.094

Based on table 1, the amount of data (N) in class IV SDN Gunung Mulyo is 21 students. The mean

(mean) of the pre-test was 62.6 and the mean (mean) of the post-test was 92.2. The standard deviation of the pre-test score is 12.586 and the standard deviation of the post-test value is 5.773. Based on the above calculation using Shapiro-Wilk, it can be concluded that the average is normally distributed because the significance level is > 0.05. The learning outcomes on the pre-test score have a sig value of 0.115 and the post-test value has a sig value of 0.094, so it can be concluded that the data is normally distributed.

Table 3. Correlation Test Results Using SPSS 24.0

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	pre-test and post-test	21	.903	.000

After the normality test is carried out, you can then use the correlation test which aims to find out whether or not there is a relationship between before and after the implementation of the pair check cooperative learning model. If the value is significant < 0.05 then there is a relationship with the use of the learning model, and conversely if the value is significant > 0.05 then there is no relationship with the use of the pair check cooperative learning model. From the table above it can be seen that the significant value is < 0.05, so it can be concluded that there is a relationship between before and after the implementation of the pair check cooperative learning model.

Table 4. Test Results of Paired Sample Test Using SPSS 24.0

Paired Samples Test									
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest-posttest	-2.869.565	778.364	162.300	-3.206.155	-2.532.976	-17.681	20	.000

Based on the table above, it can be seen that the significance value of 0.000 is less than the significance of 0.05 (0.000 < 0.05), so the H1 hypothesis in this study is declared accepted. This means that there is a significant influence between students' learning abilities in understanding the angle measurement material before using the pair check type cooperative learning model and after using the pair check type cooperative learning model. It can be concluded that the results of the t-test analysis of students' mathematics learning outcomes show a significant value of 0.000. Significant value indicating 0.000 < 0.05 so that H0 is rejected. This is also supported by the mean value of the post-test score of 92.2 which is greater than the pre-test value of 62.6.

In this study, researchers conducted research on only one class, this research was carried out by giving treatment). Where students are given pre-test questions to find out students' understanding of the angle measurement material that has been explained by the teacher. Furthermore, students are given treatment in learning mathematics using the pair check cooperative learning model and then given a question test at the end of the lesson to measure how far students' understanding is in understanding the material during learning. This was done with the aim of knowing whether or not there was a difference in the average score of mathematics learning outcomes before and after the use of the pair check type cooperative learning model through the results of the pre-test and post-test given to students and then the results were analyzed using SPSS 24.0 software.

Based on the results of calculations that have been carried out by researchers, that the post-test score is higher than the pre-test value. Before being given the pre-test value treatment, the highest score was 80, the lowest score was 36, the average value was 62.6, the median value was 64, the mode value was 72, and the standard deviation was 12.586. After doing the pre-test, then given the post-test questions. Before being given the post-test questions, students were given mathematics learning material using the pair check cooperative learning model. In the post-test score, the highest score was 100, the lowest score was 800, the average value was 92.2, the median value was 92, the mode value was 92, and the standard deviation was 5.773. The post-test results show that the average post-test score is higher when compared to the pre-test score. This is also shown in the t-test scores of pre-test and post-test of student learning outcomes on angle measurement material. The t-test here is carried out to determine whether there is influence in the learning process between before and after

being given treatment (treatment). The probability value obtained between the pre-test and post-test values with a significant level of 5% and df 20 is 0.000. The calculation of the t-test shows that the probability value is smaller than the significance level. This means that the average initial ability before the use of the pair check cooperative learning model and the average after the use of the pair check cooperative learning model is different.

The data that has been interpreted above shows that there is a significant difference between before and after the use of the pair check cooperative learning model in learning mathematics. This is due to differences in treatment where previously students were only given explanations using the lecture method while students were then given treatment using the pair check cooperative learning model. Based on the identification of the initial conditions, it is known that the obstacles in the learning process for students tend to be passive. During learning activities students only listen to explanations from the teacher and students will feel bored quickly and assume that learning is something that is not fun. The results of the hypothesis analysis and t-test showed that there was a significant difference between student learning outcomes before and after being given treatment using the pair check cooperative learning model. The average student learning outcomes after being given treatment is higher than the average student learning outcomes before being given treatment.

In learning mathematics learning activities are focused on academic activities, learning is centered on the teacher in explaining learning material. Where in its application the teacher exercises strict control over student learning progress. Directions are given by the teacher when explaining the learning tasks and material being taught. The teacher controls the content of the material and the sequence of information received by students so that the teacher can maintain the focus on what students want to achieve.

The use of the pair check cooperative learning model can improve student learning outcomes in learning mathematics, especially in the material of measuring angles. This can be seen when learning takes place, when ordinary learning students only listen to the teacher's explanation and students always feel bored, but when researchers try to apply one of the learning models students are more active in participating in mathematics learning and students also feel happy. Mathematics is a subject that most students find difficult and annoying, many students feel sleepy during learning, complain because it is difficult, and some chat with other friends. In fact, there are also students who leave the classroom during the learning process. Therefore, teachers are required to be more creative and innovative in learning so that students will be interested in participating in learning and also provide motivation to students that learning is fun.

There is an influence on student learning outcomes in learning activities after using the pair check cooperative learning model, this is clearly seen in the final test results in the form of multiple choice questions and it is clear in the learning process that almost no students chat with other friends or are sleepy during the learning process going on. In learning, especially learning mathematics, direct experience is needed to strengthen student understanding. The teacher's role is also important as a facilitator in learning. Students must also be active in the learning process so that understanding can be found by students themselves. Students will more easily accept lessons when students are active and material is conveyed in real terms through direct experience, demonstrations, practice and others.

4.   CONCLUSION

From the discussion above, it can be concluded that the use of the pair check cooperative learning model has an effect on learning mathematics in the angle measurement material for class IV SDN Sugihwaras I shows a significant value of 0.05 (0.000 < 0.05) so the hypothesis (H1) in this study is declared accepted . In this test, there was a very large influence between student learning outcomes when before using the learning model and after using the paircheck learning model in class IV students at SDN Gunung Mulyo, Sedayu, Bantul. It is suggested to make the pair check type cooperative learning model as an alternative learning that can be used in an effort to help students understand the subject matter.

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