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The Effect of the *Think Pair Share* (TPS) Type Cooperative Learning Model on the Learning Achievement of Grade VIII Students at MTs Bustanul Ulum Tagangser Laok on the Subject of Sound

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Abstract
This study aims to determine the effect of the Think Pair Share (TPS) cooperative learning model on student achievement at MTs Bustanul Ulum-Tagangser Laok on the subject of sound. The research was carried out in the even semester of the 2013/2014 academic year with the implementation time of 17 – 29 March 2014. The research method used was True Experimental Design and the sampling technique used Purposive Random Sampling. The sample in this study was class VIII-B as the experimental class and class VIII-D MTs as the control class with a total of 30 students each. The experimental class was given treatment in the form of the application of the Think Pair Share (TPS) cooperative learning model and the control class was given treatment in the form of a conventional learning model. The data collection technique is a test in the form of multiple choice of 20 questions and non-test in the form of observation sheets of student learning activities. The results obtained from this study indicate that the average post-test scores for the experimental class were higher than those for the control class, namely 82.17 and 66.67 respectively. Based on the hypothesis test on the post-test data, it is found that tcount = 4.89 is greater than ttable = 2.000 so that Ho is rejected and Ha is accepted. There is a significant influence between the Think Pair Share (TPS) type cooperative learning model and the conventional model as a comparison to class VIII learning achievement at MTs Bustanul Ulum Tagangser Laok on the subject of Sound. Based on the results of observations of student learning activities, it was shown that the experimental class obtained an average activity score higher than that of the control class, namely 76.0% and 64.2%.
Keywords: *Think Pair Share (TPS) Cooperative Learning, Student Achievement*

INTRODUCTION

Education is the main foundation in building quality human resources. One of the goals of education is to improve students' competence in understanding and applying science. In the learning process, the strategies used by educators play an important role in determining student learning success. Therefore, choosing the right learning model is a priority in creating an effective and enjoyable learning atmosphere.[1]

The cooperative learning model has proven to be one of the approaches that is able to improve student learning outcomes. One type of cooperative learning that attracts attention is Think Pair Share (TPS).[2] This model provides opportunities for students to think individually, discuss with their partners, and share the results of the discussions with a larger group. This approach not only enhances interaction between students but also helps them understand the material in depth through collaboration.[3]

In the context of science learning, especially on the subject of Sound, the TPS model is very relevant to be applied.[4] This subject requires students to not only understand abstract concepts but also relate them to phenomena that occur in daily life. Unfortunately, at MTs Bustanul Ulum Tagangser Laok, student learning outcomes on this material have not been optimal, which can be caused by a learning approach that does not involve students actively.

Based on these problems, this study aims to analyze the influence of the Think Pair Share (TPS) type cooperative learning model on the learning achievement of grade VIII students on the subject of Sound. This research is expected to contribute to the development of effective learning strategies to improve student learning achievement, especially in the field of science.

Low student activity will affect student learning achievement. From the results of interviews with class VIII physics teachers at MTs Bustanul Ulum Tagangser Laok, students' learning achievements, especially in physics subjects, are still low, which is shown through the achievement of students who have not met the KKM (Minimum Completeness Criteria). This is because the condition of students who are still teacher-centered, namely students are inactive during the learning process, where students are just silent, sitting and listening to the material presented.[5]

Therefore, it is necessary to improve the quality of learning which is expected to increase learning activities which are correlated with the improvement of student learning achievement in teaching and learning activities. One of the efforts to improve student learning activities and achievement is carried out by using a cooperative learning model

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[1] Surayya, L., Subagia, I. W., & Tika, I. N. (2014). The influence of the think pair share learning model on science learning outcomes is reviewed from students' critical thinking skills. *Indonesian Journal of Science Education and Learning*, *4*(1).

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of the *Think Pair Share* (*TPS*). Type cooperative learning model *Think Pair Share* It is a cooperative learning model carried out by students in pairs, where each pair must help each other to achieve the expected learning goals. In addition, the cooperative learning model is a learning model designed to influence student interaction patterns. Advantages of the cooperative learning model (Surihatiningrum, 2013) *Think Pair Share* Among them is being able to give students more time to think, answer, and help each other, students have more opportunities to contribute to each other's ideas, students interact with their group members and so on. Based on research conducted by Mufidah in 2013, the cooperative learning model of the (Surihatiningrum, 2013)*TPS* can increase student learning activities both in creative thinking and teamwork. Other studies also concluded that there was an increase in learning achievement completeness ranging from 51.28% to 89.74% with the application of the cooperative learning model (Mufidah, 2013)*TPS* (Winayah, 2013).[6]

The implementation of the Think Pair Share (TPS) learning model is expected to be able to provide a solution to the low learning achievement of students. This model has the advantage of encouraging active student involvement during the learning process. The individual thinking stage (Think) allows students to reflect on the material independently, while discussing with a partner (Pair) encourages students to exchange ideas and opinions with each other. The Share stage provides an opportunity for students to convey the results of the discussion to the group or class, thereby improving communication skills and collective understanding.

In addition, the TPS model can help overcome various gaps in learning, such as students' lack of confidence in expressing opinions and lack of interaction between students in class. With a clear division of responsibilities at each stage, TPS provides a meaningful learning experience and encourages the creation of an inclusive learning atmosphere.[7]

This research was conducted on grade VIII students at MTs Bustanul Ulum Tagangser Laok as the research subject. The selection of this location is based on initial observations that show that students often face difficulties in understanding Sound material. The low learning outcomes in this material are allegedly due to a more teacher-centered learning approach so that students do not get the opportunity to actively participate.

Through this study, it is hoped that the extent of the influence of the Think Pair Share (TPS) type cooperative learning model on improving student learning achievement. The results of this study are also expected to be a reference for teachers in choosing appropriate learning models to improve the quality of learning, especially in science materials. Thus, efforts to improve student learning outcomes can be realized, along with the achievement of quality and sustainable education goals.

METHOD

The type of research used is experimental research conducted using *the Pretest-Posttest Control Group Design* design to test the hypothesis with a research design where the two samples are given different treatments. This research was conducted on March 17

[6] Putri, C. S., Muchlis, E. E., & Rusdi, R. (2019). The Effect of the Think Pair Share Type Cooperative Learning Model on the Mathematics Learning Outcomes of Grade VIII Students of SMPN 17 Bengkulu City. *Journal of School Mathematics Learning Research (JP2MS), 3*(1), 40-50.

[7] Bakri, M., Lestari, R., & Ade, F. Y. (2015). *The Effect of Think Pair Share Type Cooperative Learning on Human Digestive System Materials on Biology Learning Outcomes of Grade VIII Students of SMP Negeri 1 Kefullan Hulu Academic Year 2014/2015* (Doctoral dissertation, Pasir Pengaraian University).

– 29, 2014 at MTs. Bustanul Ulum Tagangser Laok, Waru, Pamekasan for the 2013/2014 school year. The population in this study is all students of grade VIII MTs. Bustanul Ulum Tagangser Laok, with the sample in this study consisting of 2 classes, namely class VIII-B (TPS Model) and class VIII (Conventional Model) which were taken through *Purposive random sampling*. The instruments used in this study are in the form of learning instruments (syllabus, lesson plans, textbooks, implementation sheets and LKS) and test instruments in the form of multiple choice as many as 20 questions and non-tests in the form of learning activity observation sheets. The test is given twice, namely *pretest* and *posttest*. The research instruments used are expertly validated. Furthermore, through the analysis of test results, a hypothesis test is carried out to draw conclusions.

RESULTS AND DISCUSSION

Based on the results of the research in class VIII MTs Bustanul Ulum Tagangser Laok, the average results of pretests and postes were obtained as follows:

Table 4.1
Results of Pretest and Postes of Experimental and Control Classes

Class	Pretest				Postes			
	Max Value	Mean Value	Average	SD	Max Value	Mean Value	Average	SD
Eksperimen	65	20	45,5	12,6	100	60	82,17	12,2
Control	65	20	44,5	12,5	85	45	66,67	12,2

Based on Table 4.1, the average results of the pretest of the experimental class and the control class are still relatively low at 45.5 and 44.5 respectively compared to the average results of the experimental class and the control class of 82.17 and 66.67, respectively. This is because before being given the pretest, the students had not received the treatment related to this study, while the results of the experimental class and the control class obtained a relatively high average score because before being given the postes, the two samples had been given treatment. The treatment is in the form of using a Think *Pair Share* (TPS) type cooperative learning model in the experimental class and a conventional learning model in the control class. The results also show that the postes score of the experimental class is higher than that of the control class. This shows that the learning achievement of students in the experimental class who use the *Think Pair Share* (TPS) type cooperative learning model is higher than the learning achievement of students in the control class who use the conventional model.

Before conducting a hypothesis test, the data obtained from the results of the research was first tested for data analysis prerequisites in the form of a normality test and a homogeneity test. The results of the normality test of pretest and postes data in the experimental class and control class are as follows:

Table 4.2
Calculation Results of Pretest and Postes Normality Test for Experimental and Control Classes

Data	Number of samples	χ2calculate	χ2Table
Results of the Pretest of the Experiment Class	30	10,63	11,07
Results of Postes of Examination Class	30	10,87	11,07
Control Class Pretest Results	30	9,81	11,07
Control Class Postes Results	30	9,86	11,07

Based on the results of the normality test calculation shown in Table 4.2, the four data tested for normality, both the data of the pretest and postes of the experimental class and the data of the pretest results and postes of the control class, produced χ2 counts smaller than $\chi^{2\ tables}$. χ2 calculations generated from the four data were 10.63, 10.87, 9.81 and 9.86 respectively. Meanwhile, the result of χ^{2table} is 11.07 which is obtained by determining the degree of freedom (dk) which is 5 and the selected significance level is 5%. The results of the calculation of the data normality test in Table 4.2 show that the four data produced are data from samples that are normally distributed.

Meanwhile, the results of the calculation of the homogeneity test of pretest and postes data in the experimental class and control class are as follows:

Table 4.3
Calculation Results of Pretest and Postes Homogeneity Test for Experimental Group and Control Group

Result	Pretes	Posts
S_E^2	159,59	148,59
S_K^2	157,17	147,9
F_{hitung}	1,015	1,004
F_{tabel}	1,84	1,84

The results of the calculation of the homogeneity test of the pretest and postes data of the experimental class and the control class are shown in Table 4.3. The variance generated by the pretest data of the experimental class and the control class was not the same, 159.59 and 157.17, respectively. The same case also occurred in the postes data of the experimental class and the control class were 148.59 and 147.9, respectively. However, pretest data and postes data of the experimental class and control class are still categorized as homogeneous data. This is also shown in Table 4.3, in the prestes data Fcal = 1.015 is smaller than *Ftabel* = 1.84, while in the postes data *Fcal* = 1.005 is smaller than *Ftabel* = 1.84. From these results, it can be concluded that the pretest and postes data of the experimental class and the control class are homogeneous.

After the prerequisite test of data analysis, the postes data hypothesis test was then carried out in the experimental class and control class which are shown in the following table:

Table 4.4
Results of Postes Data Hypothesis Testing of Experimental Group and Control Group

Data	Eksperimen	Control
$\bar{x}$	82,17	66,67
n	30	30
Sg	12,18	

Calculation	4,89
ttable	2,00

Based on the results of the t-test of the postes data of the two sample classes, it was obtained that tcount = 4.89 was greater than ttable = 2.00. The results met the criteria of Ho being rejected and Ha being accepted, there was a significant influence between the Think Pair Share *(*TPS*) type cooperative learning model* and the conventional model as a comparison of student learning achievement on the subject of Sound

Description of Data from Observation of Learning Activities

The data from the observation of student learning activities in the Think *Pair Share* (TPS) type cooperative learning process are as follows:

Table 4.5
Results of Observation of Learning Activities of Students in Experimental and Control Classes

Class	Things to observe					Average
	Ask	**Answer**	**Discussion**	**Presentation**	**Conclude**	
Eksperimen	72,2%	67,8%	85,5%	73,3%	80%	76,0%
Control	53,3%	52,2%	67,8%	100%	47,7%	64,2%

Table 4.5 shows the results of observation of the learning activities of students in the experimental class and the control class. In the points of asking, answering, discussing and summarizing, the experimental class obtained a higher percentage of scores of 72.2%, 67.8%, 85.5% and 80% respectively compared to the control class of 53.3%, 52.2%, 67.8% and 47.7% respectively. Meanwhile, in the presentation point, the experimental class obtained a lower percentage score of 73.3% compared to the control class of 100%. This difference is due to the limited time that the experimental class has in carrying out the presentation.

Table 4.5 also shows that in the five points of student learning activities observed, in the experimental class, the discussion points obtained the highest percentage of scores, which was 85.5%. These results prove that the *Think Pair Share* (*TPS*) type cooperative learning model is a learning model that is able to influence student interaction patterns, because with a smaller number of group members, students have more opportunities to convey the results of their thoughts.

The overall comparison of the results of the observation of student learning activities between the experimental class and the control class is shown in Table 4.5. The average number of learning activity scores of students in the experimental class was different from the average number of activity scores shown in the control class, which were 76.0% and 64.2%, respectively. Overall, the learning activities shown by students in the experimental class are better than those in the control class as shown in table 4.5. Although the score of the experimental class was lower than that of the control class, from these results it can be concluded that the learning activities of the experimental class students were higher than that of the control class.

Research on the Effect of the Think Pair Share *(*TPS*) Type Cooperative Learning Model* on Student Learning Achievement at MTs Bustanul Ulum-Tagangser Laok Class VIII on the Subject of Sound has been carried out by providing pre-tests before treatment and postes after treatment. Pretests are given to find out how the initial state of the student is before being given treatment while postes are given to find out how the student is after

being given treatment. The treatment provided was in the form of the application of the *Think Pair Share* (*TPS*) type cooperative learning model for experimental classes and conventional learning models for control classes. The learning achievement results shown by the experimental class were higher than in the control class, as evidenced by the difference in the average scores of the postes data of the experimental class and the control class, which were 82.17 and 66.67, respectively. The results shown in Table 4.1 show that the influence of *the Think Pair Share* (*TPS*) type cooperative learning model on student learning achievement is better than that of the conventional learning model.

Before hypothesis testing is carried out, pretest and posttest data for the experimental class and control class must be tested first, namely in the form of normality test and homegenity test. The normality test was carried out to find out whether the sample data came from a normally distributed population or not. The importance of knowing whether the data is normal or not before conducting a hypothesis test is very influential in determining the type of statistical data analysis that will be used to test the hypothesis that has been determined. The data tested for normality included data from the results of the experimental class and data from the control class tests. Based on the results of the data normality test calculations that have been carried out, the four data are data derived from a normally distributed sample shown in Table 4.2.

The homogeneity test was carried out to find out whether the data was homogeneous or not. Like the normality test, the homogeneity test is also very important to be carried out, which is related to choosing the type of t-test to be used to test the data hypothesis. In this study, the variance generated from the pretest data of the experimental class and the control class had different variances. The same case also occurred in the variance of postes data between the experimental class and the control class. Although the two data produced different variances between the experimental and control classes, they were still categorized as homogeneous data. This is because *the resulting Fcal* is still smaller than *the Ftabel* as shown in Table 4.3.

In this study, there are several reasons to choose the appropriate data analysis to test the hypothesis. First, in this study, the data analysis chosen is parametric statistics because based on the normality test that has been carried out, it is proven that the data tested comes from samples that are distracted normally. Second, the hypothesis test in this study uses a t-test because the type of hypothesis in this study is a type of comparative hypothesis with two samples. Third, because the number of samples in the experimental class is the same as the number of samples in the control class and the variance of the two samples is homogeneous, the hypothesis is tested by the Separated Variance t-test as has been done in this study. Based on the results of the hypothesis test in Table 4.4 of the postes data, it shows that there is an influence of the *Think Pair Share* (*TPS*) type cooperative learning model on student learning achievement because the calculation is greater than the table. If associated with the previous results which stated that the learning achievement of students in the experimental class with the Think Pair Share *(*TPS*) type cooperative learning model* was higher than that of the control class using the conventional learning model, it can be concluded that the *Think Pair Share* type cooperative *learning model (TPS*) has a positive effect on student learning achievement.

The positive influence is due to the Think *Pair Share* (*TPS) type cooperative learning model* that requires students to play an active role and cooperate with each other with their group members in solving problems and understanding the material. This has been proven based on the results of observations of student learning activities contained in Table 4.5, namely the learning activities of students in the experimental class are

relatively higher compared to the control class. In this study, the difference in score percentage between the experimental class and the control class was due to the characteristics contained in the TPS-type cooperative learning model , namely thinking to solve problems given by the teacher, discussing in pairs and sharing with all students. In Table 4.5, the students of the experimental class were more active in asking, answering, discussing, and concluding compared to the control class. Meanwhile, at the presentation point, the activity of the experimental class students was lower than that of the control class due to the limited time in the implementation of the presentation so that not all groups presented the results of the discussion.

CONCLUSION

Based on the results of the analysis and discussion of the research data, it can be concluded that:

1. There is a significant influence between the Think *Pair Share* (*TPS*) type cooperative learning model and the conventional model as a comparison on student learning achievement on the subject of Sound.
2. Based on the results of observation of student learning activities, the experimental class obtained a higher average score of student learning activities compared to the control class, which was 76.0% and 64.2%.

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