

The Influence of ‘Think Talk Write’ Model Implementation on the Learning Theme of ‘Always Saving Energy’

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This research attempts to determine the implementation of TTW model that has an impact on improving the quality of the learning theme ‘always save energy’. This research is a quasi-experimental study with a population of fourth grade primary school students in the Sultan Agung Cluster and the research sample uses purposive sampling technique. Analysis of the data obtained using the t-test sig (2-tailed) is smaller than $\alpha = 0,05$ ($0,000 < 0,05$) so, $H_a =$ accepted and $H_o =$ rejected. The research result concluded that the application of the TTW model has an effect on improving the quality of the learning theme ‘always save energy’ based on the acquisition of pre-test and post test scores from experimental and control classes. The quality of learning improved the quality of learning, obtaining a score of 0.450 in the experimental class with medium interpretation and 0.253 in the control class with low interpretation.

Keywords: *Think Talk Write Model, Learning Quality*

Introduction

The 2013 curriculum includes a combination of several subjects shortened in a theme learning implementation. The integration of several subjects integrated in the theme has the effectiveness of changing, improving, and balancing the ability to think and act harmonised into three competencies, attitudes, skills, and knowledge (Murfiah, 2017). The 2013 curriculum has a learning approach called interactive thematic. Integrative thematic learning in the 2013 curriculum is learning that emphasises student involvement in the learning process and direct students to be actively involved (Murtono, 2017). The application of interactive thematic learning that is appropriate and in accordance with its proportions, can train student to gain direct experience in solving problems independently or individually from a variety of gained

knowledge . However, in reality, the quality of interactive thematic learning in primary school is not optimal. There are still some students who are passive in implementing learning, afraid to express their opinion, argue, and provide comment on a problem given by the teacher in the classroom. Student prefer to equate opinions with friends and other groups and are less confident with their personal opinion when solving problems in either groups, discussions, or independently. In addition, students with greater abilities dominate learning and o express fearless opinions compared to students with medium and low abilities.

Discrimination and non- optimal implementation of thematic learning can have an impact on the low quality of learning, which caused by the application of indicators of learning quality that have not been applied optimally to the process of teaching and learning activities. The application of indicators of the quality of learning is used as a benchmark to determine the direction and objectives of quality learning y. The reference to achieving optimal learning quality can be seen from the improvement of students' mindset, student activities, teaching skills, student learning outcomes, and teaching components related to the teaching and learning process. A quality teaching component creates a positive effect on students so that they can solve problems related to the surrounding environment both independently and in groups. The study agrees with Depdiknas about the definition of operational learning quality, the quality of learning has a close relationship with the teaching component including teacher, student, curriculum, teaching material, facilities and infrastructure, as well as the learning system in producing a process that has an impact on optimal learning outcomes and is appropriate in its application to existing curriculum objectives (Depdiknas, 2004).

The quality of learning in the second theme (Always Saving Energy) in primary schools is low. The problem of a lack of optimal quality of learning in the second theme (Always Saving Energy) in the Sultan Agung Cluster of Mejobo District fourth grade regarding learning Indonesian and Natural Science has a low average. The results of the pre-research conducted on 1 August , 2019 regarding the second theme (Always Saving Energy) showed low quality which can be seen in the following table:

Table 1: Student Pre-Research Results Theme II

No	School Name	Average	KKM	Number of Students
1	SD N 5 Mejobo	63,2	70	20
2	SD IT AL-Kausar	62,5	70	20

[Source: Students Pre-Research Results, 2019]

Based on observations on August 1, 2019, the problem of the low quality of learning of the second theme (Always Saving Energy) is caused by two factors: internal and external s. Internal factors that influence the low quality of learning consist of students feeling difficulties and not beings accustomed to describing opinions either verbally or in writing, if faced with

questions in the form of description. This can make it possible for some students to answer in the same language in describing the opinions of students with one another so it can be concluded that students are easily influenced by other people's answers without thinking about the consequences of truth. The second factor is that external factors are the most dominating and affect the low quality of student learning derived from teaching patterns and teacher learning in the classroom.

The pattern of teaching and learning carried out by the teacher, have not been implemented in the model and method of learning which are effective in improving the quality of learning. Although a collaborative learning method with peer tutoring has been implemented, in its application it has not been able to improve the quality of learning. The solution to overcoming the problem of lack of quality learning in the Sultan Agung Cluster of Mejobo District is to apply an innovative learning model that is adapted to the material and characteristic of students. The think talk write learning model can provide opportunities to improve the quality of learning and develop students' thinking abilities to be improved individually or in group. In addition, the stages of learning activities in the think talk write model provide freedom for student to explore ideas and core knowledge related to each students' learning experience.

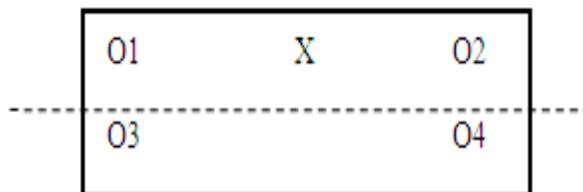
The learning model think talk write is a cooperative learning model that has stages of learning activities by way of thinking, speaking and writing which can make an impact on creating an atmosphere of making learning fun, meaningful, social, democratic, enhance student learning activity, increase participation and interest in learning, and improve student understanding and memory (Ardiansyah, 2013; Supraptinah, 2013). The result of the application of the TTW (Think Talk Write) model can have an influence on improving the quality of learning in the Social Studies in fourth grade primary school. Based on the results of the influence test, the data using the t-test obtained sig 2-tailed $< \alpha$ ($0,000 < 0,05$), it can be concluded that H_a is accepted and H_o is rejected. Based on the data, proving that it has an influence on the use of TTW model in improving the quality of learning by increasing by increasing it to 0,29 in a low control category and 0,59 in the experimental class with a medium category so that the application of the TTW model can provide benefits in improving the quality learning, inviting students to enjoy learning, explore student thoughts, express the result of these thought and create an impact on positive activities in learning (Nurlindasari and Mulyani, 2018; Yazid, 2012). Based on the explanation of the research objectives, the research is entitled d "The Influenced of Think Talk Write Model in Learning Theme Always Saving Energy."

Method

This is an experimental research using a quasi-experimental research design. Quasi experimental design is a research strategy that is used because researchers find it difficult to tightly control the entry of variables originating from outside even though they already have a

group whereas the design form is a non-equivalent control group design. Non-equivalent control group design has similarities with the pre-test and-post-test control design only, the difference lies in the taking of the experimental group and the control group that is not randomly selected for the non-equivalent control group design. The description of the research design is as follows (Sugiyono, 2015: 116).

Figure 1. Research Design Non-equivalent Control Group Design



Description:

- O1 = Experiment Group Pre-test
- X = Treatment of TTW Learning Model
- O2 = Experiment Group Post test
- O3 = Pre-test Control Group
- O4 = Post-test Control Group

Experimental research was carried out in the fourth grade primary school of the Sultan Agung Cluster, Education and Youth Department of Sport, Mejobo District. The research aims to determine the implementation of the TTW model influential in improving the quality of learning in theme II in fourth grade by focusing on taking the contents of learning Indonesian and Natural Sciences. The study population consists of fourth grade students of the Sultan Agung Cluster, the sampling used a purposive sampling technique and two classes were used as research. Prior to selecting control and experiment classes, the data was tested for average similarity to discover that the initial conditions of the two classes were not very different, therefore obtaining class selection namely SD 5 Mejobo as an experimental class totalling twenty students and SD IT Al-Kausar as a control class of twenty students. The researcher divided the research procedure into three stages including preparation, implementation and reporting. The research variables consist of independent and dependent variables. Independent variable consists of the think talk write learning model. The dependent variable is the quality of learning theme II (Always Saving Energy). Control variables are in the form of learning material, pre-test and post-test question sheets, and the use of learning models.

Data collection techniques using test and documentation. The validity used in the research is the validity of expert judgment. The validity stage is carried out in three stages including (a) the researcher submitting the validation sheet and the instrument to be used in the research to

the validator, (b) the validator conducts the content validation of the test instrument, and (c) the validator states that the instrument is valid then the instrument meets the content validation, and the instrument is said to be valid if the assessment indicator meet the minimum value (Azwar, 2017). In testing the research hypotheses, the effect of implementing the think talk write model in improving the quality of learning theme II (Always Save Energy) through prerequisite tests including average similarity test, normality test, homogeneity test, hypothesis test, and N-gain test (Siregrar, 2018).

Results and Discussion

The process of data acquisition was completed by giving a test on two occasions in experimental and control classes in the form of pre-tests and post-tests. Pre-tests were given to students to discover the initial learning quality of theme II whereas, post-tests are offered to find the quality of learning after treatment. Measurements of students' initialities was completed by t-testing (independent test). The following table shows the results of the average similarity of two classes pre-test.

Table 2: Average Similarity Test Result for Independent Sample Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.165	.687	.288	38	.775	.900	3.120	-5.417	7.217
Equal variances not assumed			.288	37.932	.775	.900	3.120	-5.417	7.217

The results of the average similarity test using the t-test on results of students' pre-test scores showed that the quality of early learning in the control class and in the experimental class was relative similar. Based on the results of statistical calculations, the average value of experimental and control classes obtained t-count of 0.288 and the acquisition $df\ n - 2 = 40 - 2 = 38$ and sig (2 tailed) of 0.775. The results of the significance level in the s (2-tailed) t-test table above, amount for $sig\ 0.775 > \alpha = 0.005$ then, in accordance with the provisions of $sig >$

α conclude that H_a is accepted so, there is no difference in the average of the two classes, so that it can be said that the two classes; experiment and control have the same initial ability. Furthermore, the results of differences in pre-tests and post-test before and after obtaining the data in the experimental and control classes as described in the below table.

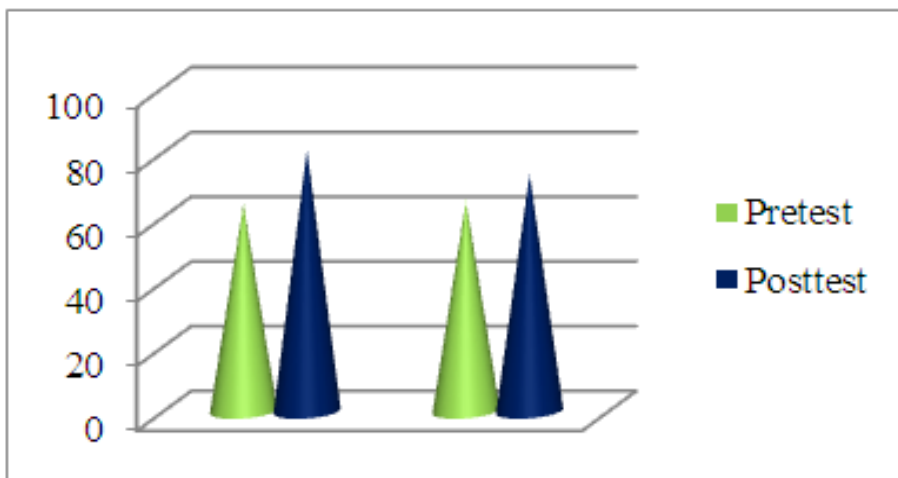
Table 3: Description of Analysis of Pre-test and Post-test Results

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Experimental	20	46	78	64.90	9.657
Post-Test Experimental	20	64	94	80.70	8.591
Pre-Test Control	20	46	78	64.00	10.073
Post-Test Control	20	58	88	73.10	8.885

Based on table 3 the experimental class pre-test results obtained an average value of 64.90 with a minimum value of 46 and a maximum of 78 as well as, a the post-test value of the experimental class which obtained an average value of 80.70 with a minimum value of 64.00 and a maximum value of 46 and 78, whereas, the post-test value of the control class obtained an average of 73.10 with a minimum value of 58 and a maximum of 88. Based on the description analysis table, there is an increase in the average quality of student learning regarding theme II between the two classes. improving learning quality can be seen from the average pre-test and post-test results of the control and experimental class.

The improvement of learning quality in the experimental class is higher than the control class. Improving the quality of learning is illustrated through a comparison diagram of pre-test and post-test results in the experimental and control classes.

Figure 2. Comparison Diagram of Pre-test and Post-test Results



The results of the pre-test in the control class obtained an average value of 64.00 and the post-test of the control class obtained an average of 73.10. From the pre-tests and post-tests, the control class experienced an average increase of 9.1. The experimental class obtained an average pre-test score of 64.90 and the post-test obtained an average of 80.70. The experimental class resulted in an average increase of 15.8. Furthermore, the results of the pre-test and post-test data were tested for normality. A normality test is used to determine whether data is normally distributed. Testing of normally distributed data is completed by kolmogrovesmirnov and shapiro-wilk. Data is normally distributed if its significance $> 0,05$ but, if the data is significant $< 0,05$ then the data is not normally distributed. Testing data uses parametric statistics with the help of SPSS version 23.0. The normality data test results are explained in the following table.

Table 4: Normality Test Analysis Results

Kelas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Pre-Test Experimental (TTW)	.151	20	.200*	.939	20	.230
Post-Test Experimental (TTW)	.100	20	.200*	.970	20	.745
Pre-Test Control (Conventional)	.174	20	.113	.926	20	.127
Post-Test Control (Conventional)	.131	20	.200*	.951	20	.387

The results of the pre-test and post-test normality tests of the experimental class obtained sig 0.200 in the kolmogrov-smirnov whereas in the shapiro-wilk they obtained sig 0.230 for the pre-test and 0.745 form the post-test. In the control class normality test using kolmogrov-smirnov in pre-tests and post-tests obtained sig of 0.113 and 0.200 while the shapiro-wilk test obtained sig 0.127 and 0.387. Based on the provisions of the pre-test and post-test results of experimental and control classes in the normality test it appears that the results of the kolmogrov-smirnov and shapiro-wilk test obtained significance value $> 0,05$ so, it was concluded that the data of the two classes were normality distributed. After the data is normally distributed, a homogeneity test is performed which is used to find out if data is homogeneous. Homogeneity test using SPSS 23.0 with levene test.

Table 5: Pre-test Homogeneity Test Results

Levene Statistic	df1	df2	Sig.
.165	1	38	.687

Based on table 5, homogeneity test results of pre-test data obtained 0.687 significance. Obtaining a significance results of 0.687 explains that the pre-test question data in the control and experimental groups have identical or homogeneous variants. In addition to homogeneity tests on pre-test data, homogeneity tests can also be performed on post-test data. The results of homogeneity data analysis in the post-test data are explained in the following table.

Table 6: Post-test Homogeneity Results

Levene Statistic	df1	df2	Sig.
.318	1	38	.576

In the results of table 6 the homogeneity test results of the post-test data of the experimental and control classes show the significance results of 0.567. Based on the acquisition of sig in the post-test, we can conclude that the data have identical or homogeneous variants with the provisions of $\text{sig} > \alpha = 0.05$. Hypothesis testing is used to determine the effect of the implementation of the TTW model in improving the quality of learning tested with the t-test formula. The basis for decision making on the t-test contains a provision that if the data is significant, the H_a is accepted and H_o is rejected. Regarding the results of the hypothesis test there is an effect of implementation of the TTW model in improving the quality of learning theme II. Conversely, if the data is not significant, H_a is rejected and H_o is accepted, the results of hypothesis test conclude that there is no significant effect on the implementation of the TTW model in improving the quality of learning theme II. T-test test data processing is performed with the help of SPSS program version 23.0. The following table shows the results of hypothesis testing using the paired sample test

Table 7: Results of T-test Test Analysis

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Experiment - Post-Test Experiment	-15.800	10.360	2.317	-20.649	-10.951	-6.821	19	.000
Pair 2	Pre-Test Control - Post-Test Control	-9.100	7.269	1.625	-12.502	-5.698	-5.599	19	.000

T-test results obtained a significant level in the pair 1 of 0.000 and pair 2 of 0.000. From the analysis of pair 1 and r 2, the results of sig 2-tailed is smaller than α ($0.000 < 0.05$) so it can be concluded that there are differences in the average value between the two classes. Based on the results of pair 1 which is used as a hypothesis test, the results of sig 2-tailed is $0.000 < \alpha = 0.05$ are explained. The results of the hypothesis test data using the t-test show that based on the results of sig 2-tailed pair 1 concludes that if the data is more significant then H_a is accepted and H_o is rejected. The results of improving quality of learning theme II in control and

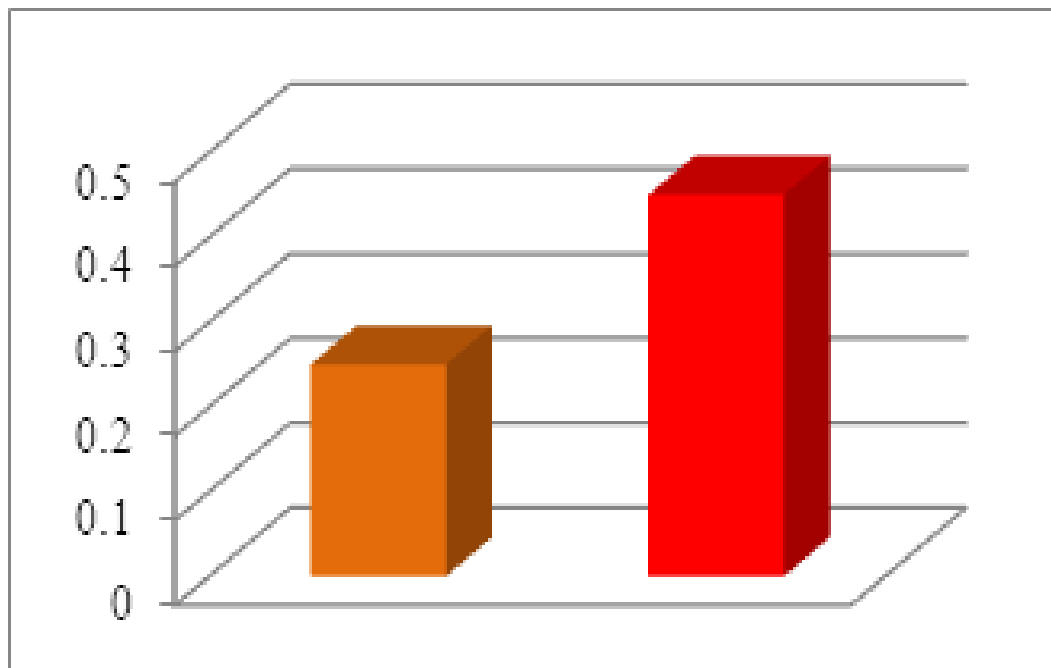
experimental classes can be seen based on the normalised gain test. The table of N-gain test results is explained below.

Table 8: Pre-test and Post-test N-gain Test Results

Kelas	Average		N-gain	Interpretation
	Pre-test	Post-test		
Control Class	64,00	73,10	0,25	Low
Experimental Class	64,90	80,70	0,45	Medium

The gain test results in table 8 explain that the control class obtained 0.25 in the low category, with the gain score in the control class being less than 0,30 with reference to the N-gain category table according to Hake ($0,25 < 0,30$). In the experimental class, the gain results are 0.45 in the medium category, with the experimental class gaining more than 0.30 referring to the N-gain category table according to Hake ($0,45 > 0,30$). Based on the results of the gain test, it was concluded that there were differences in the quality of learning theme II in the experimental and control classes. Improving the quality of learning theme II between the experimental and control classes is higher than the experimental class control class. Based on the pre-test and post-test data in the experimental class with the implementation of the TTW model is more effective in its implementation to improve learning quality g. More detail about improving learning quality are illustrated in the following diagram.

Figure 3. Diagram of Quality Improvement of Learning Theme II



Data analysis about the effect of implementing the TTW model in improving the quality of learning theme II is explained in table 7 using t-test test calculation. Based on the results of the t-test, we know that the significance level of 0.000 is smaller than $\alpha = 0.05$ with the conclusion that $H_a =$ accepted and $H_o =$ rejected. In addition, this is supported by the result of the average difference between the experiment and control classes. In the experimental class, the average pre-test was 64.90 and the post-test 80.70 whereas, in the control class the average pre-test was 64.00 and the post-test was 73.10. It can be seen from the data that there are different treatments of the two classes that make a difference in the average quality of learning outcome of theme II fourth grade students of the Sultan Agung Cluster. Different treatments can be seen in the use of learning models between conventional and TTW model. Based on the analysis of the influence of test data, there is significant influence on the use of models in improving the quality of learning on theme II between the use of the TTW model and conventional model. The use of TTW learning model has a more significant influence on improving the quality of learning. Testing for improving the quality of learning theme II fourth grade students can be calculated using the normalised gain test (N-gain). Based on the results of the gain test, the quality of learning has increased both in experimental and control classes. However, a more effective increase in learning theme II was seen from the results of the gain test in the experimental class which amounted to 0.45 in medium category whereas, while in the control class it was 0.25 in the low category. Although the control class has improved quality, seen from the average results of the increase in the pre-test and post-test value of 64.00 and 73.10, the gain test results in the control class cannot be categorised as having improved the quality of learning theme II based on the assessment the category table according to Hake. Therefore, based on the results of data analysis, the use of the TTW model implemented in the experimental class is better able to improve the quality of learning theme II (Always Save Energy). Strengthened by the opinions of Suprijono regarding the advantages of using the think talk write model that is able to develop problem solving and thinking skills and foster student interest (Suprijono, 2012).

Improving the quality of learning theme II using the TTW model is more effective and able to have a significant impact on learning. In the experimental class, learning activities are carried out optimally so that, its effect develops student's mindset to further improve the ability to think, communicate, and interact between friends, teacher, and group. Improvement in students' mindset is seen when applying the stage of the TTW learning model implemented in experimental activities. The first stage of thinking includes analysing the problems contained in the worksheet through reading information. Then, students write important points in the reading using small notes related to the problems that exist on the worksheet. The second stage discusses the activities provided by the teacher in formulating the results of group responses, group presentations, making conclusions and reflecting on activities. From the application of the stages of the TTW learning model in the experimental class, providing an impact to students to be more active in participating in learning, ensures that there are no gaps in learning,

students can interact effectively in one group to exchange information, and all students are enthusiastic about responding to questions from the teacher without fear of being wrong.

The implementation of learning in the experimental class using the TTW model is very helpful for improving the quality of student learning regarding theme II. Problems related to discrimination in learning can be minimised and student learning opportunities are provided without distinguishing high, medium, and low ability students. All students are given the opportunity to express their opinion through written and verbal communication. This can trigger students' enthusiasms in accepting learning and competing to find the right solution to the problems that have been discussed. In the control class, implementation of learning has many differences compared to the implementation of learning in the experimental class. In the control class, the learning process has not been able to make students active, there are still students who are silent and do not pay attention to the teacher, fear answering questions, and discriminate students' learning abilities between high, medium, and low ability. Although the teacher has mastered the material well and applied the learning method, there are still many students who are indifferent to participating in learning. This can trigger the learning process to become monotonous and passive as students who have high abilities dominate much of the learning compared to students who have medium to low abilities. Seeing the difference between the use of TTW and conventional learning model, the quality of learning will increase if several indicators of learning quality are optimally applied in the learning process. The implementation of improving the quality of learning using data from TTW model has a great influence on improving learning theme II.

Supported by the results of previous studies, the application of the TTW model has an effect on improving the quality of learning as evidenced by average learning outcomes of experimental class students higher than the average learning outcome in the control class that uses the conventional learning model. In the first research experimental model as much as 54.25 and in the first research control class 40.07 explain that the TTW learning model has an influence on improving the quality of learning seen from the indicator of the difference in average learning outcomes of the two classes in the first study. Learning increases with a significance level of less than 5% and an average of 47.12 in the second research control class and 92.12 in the experimental class in the second research. The application of the TTW model has advantages in developing the ability to analyse, and encourage students to think both individually and in groups (Arisa, 2015; Rizal, 2018; Yanuarta, 2014).

Conclusion

Based on the results of the 2-tailed significance t-test of $0.000 < 0.05$, it is concluded that there is a significant influence on the implementation of the TTW model in improving the quality of learning theme 'always saving energy' in the fourth grade of the Sultan Agung Cluster. In



the implementation of learning the experimental class learning activities carried out can influence the improvement of students' mindset to further develop the ability to think, communicate, and interact between friends, teachers, and groups. Improved learning quality can be seen from the results of the N-gain test of 0.45 in the experimental class with medium interpretation and 0.25 in the control class with low interpretation. Therefore, the implementation of the use of the TTW model in teaching and learning activities has an effect on improving the quality of learning seen from the average results of student learning differences. In the experimental class of 64.90 the pre-test and post-test results amounted to 80.70 while, in the control class it was 64.00 in the pre-test and 73.10 in the post-test.

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