



The Effect of the Think Pair Share (TPS) Cooperative Learning Model on Students' Geography Learning Outcomes

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ABSTRACT

The main problem in Geography learning at SMA Gajah Mada Bandar Lampung lies in the low learning outcomes of students, which have not yet reached the Learning Objective Attainment Criteria (KKTP). The learning process is still dominated by lecture methods, resulting in low student engagement, limited interaction, and a lack of optimal understanding of geographic concepts. This condition highlights the need for innovative learning models that can improve student participation and comprehension. This study aims to examine the differences in Geography learning outcomes before and after the implementation of the Think Pair Share (TPS) cooperative learning model, to analyze the influence of TPS on learning outcomes, and to investigate differences based on students' gender and learning involvement. The research employed a quantitative approach with a One-Group Pretest-Posttest design. The sample consisted of 35 students from Grade X-3 of SMA Gajah Mada Bandar Lampung. Research instruments included a learning achievement test and a student involvement questionnaire. Data were analyzed using t-test, two-way ANOVA, and simple linear regression. The findings revealed a significant difference between pretest and posttest scores after the implementation of TPS. Moreover, the TPS cooperative learning model had a positive and significant effect on students' learning outcomes. The analysis also showed differences in learning outcomes based on gender, where gender was found to be a more dominant factor than learning involvement. Therefore, the TPS model is proven to be an effective alternative strategy to enhance students' conceptual understanding and academic achievement in Geography learning.



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INTRODUCTION

The success of a learning process is characterized by improved learning outcomes achieved by students (Slameto, 2020). Problems in education increase year by year. One of the main issues facing this nation is the low quality of formal education at every level (Suncaka, 2023). Many people question what is wrong with our education system. From various observations and data analysis, there are many factors that cause the quality of education not to experience significant improvements, one of which is that the approach used in the classroom has not been able to create optimal conditions for learning to take place (Warisno, 2022).

The educational process is inseparable from classroom teaching and learning activities. Teaching and learning activities are crucially determined by the collaboration between teachers and students. Teachers are required to present learning materials effectively. Therefore, creativity and new ideas are needed to develop methods for presenting learning materials in schools. Creativity refers to a teacher's ability to select appropriate methods, approaches, and media for presenting learning materials (Mulyawati, 2021). Teacher-centered learning does not enhance student learning activities. This is demonstrated by the methods teachers use in class during the learning process. This is not constructivist and does not encourage students to build on prior knowledge (Widodo et al., 2023). Teachers, as information providers, tend to dominate classroom learning activities, resulting in a lack of interaction between teachers and students, which in turn impacts the quality of learning in the geography teaching and learning process. Students have varying levels of learning achievement, including those with high learning achievement, those with adequate learning achievement, and those with poor learning achievement (Budiana, 2024).

Based on data obtained from preliminary research at Gajah Mada High School, Bandar Lampung, it shows that there is still a gap between learning outcomes (summative tests) and the established KKTP standards.

Table 1 Test Results Summative Subject of Geography in Gajah Mada High School, Bandar Lampung

Learning Objective Achievement Criteria (KKTP)	Class						
	X 1	X 2	X 3	X 4	X 5	X 6	X 7
Completed	20	23	17	21	21	22	22
Not Completed	19	15	22	18	18	16	17
Percentage of Incomplete	48.72%	39.47%	56.41%	46.15%	46.15%	42.11%	43.59%

Source : Gajah Mada High School, Bandar Lampung, Academic Year 2024/2025

Table 1 shows that the completion rate of Geography learning outcomes in grade 10 is still suboptimal. Although some students have achieved completion, the percentage is still lower than the percentage of students who have not. This indicates the need for more effective interventions in teaching methods to improve student learning outcomes and meet established standards. Initial observations also indicate that Gajah Mada Senior High School in Bandar Lampung still predominantly uses the lecture method in its teaching and learning process. However, various active and innovative cooperative learning models have not been optimally implemented at the school, which could potentially increase student participation and understanding.

The cooperative learning model emphasizes cooperation and interaction among group members in the learning process. This approach involves the active participation of each group member, with the goal of collectively improving understanding and mastery of the subject matter. Students are not merely recipients of information from the teacher but also active participants in the learning process. One method in the cooperative learning model is " *Think Pair Share* ." (Magdalena dkk., 2024). The Think Pair Share cooperative learning model positions the teacher as a facilitator, presenting material briefly, after which students are given the opportunity to reflect deeply on what has been explained. The Think Pair Share cooperative learning model is a type of cooperative learning where students work in pairs, providing more time for thinking, responding, and collaborating with others. The Think Pair Share (TPS) cooperative learning model can be applied to all subjects (Sutanti, 2021).

This model is effective for increasing student engagement in learning. Think Pair Share allows students to work independently and collaborate with others. This research is in line with the findings (Putri et al., 2024) which show that the application of the Think Pair Share (TPS) learning model is able to increase student learning activities, thus supporting this research which focuses on improving geography learning outcomes through the same learning model. A learning model is considered successful if students achieve good learning outcomes, or in other words, meet the Minimum Completion Criteria (KKM). In the Independent Curriculum, the Minimum Completion Criteria (KKM) have been replaced by the Learning Objective Achievement Criteria (KKTP). Learning outcomes are the abilities students possess after undergoing learning experiences. Learning outcomes are a measure of the success of the learning process. Therefore, it can be said that learning outcomes are the skills students acquire after undergoing learning activities (Nurlaika et al., 2024).

The Think Pair Share (TPS) cooperative learning model is suitable for materials that provide space for students to express opinions and discuss, rather than simply requiring a single answer (Sadipun, 2020). This learning model is applied to the Atmospheric Dynamics topic, the focus of this research, because the material

is abstract and requires higher-order thinking skills to understand the relationships between weather and climate elements and their impacts on life. Therefore, the TPS approach to this topic is highly relevant for helping students develop conceptual understanding while enhancing critical thinking and scientific communication skills. Based on the background of the problem above, this study raises the title " The Effect of the Think Pair Share (TPS) Cooperative Learning Model on Students' Geography Learning Outcomes".

METHOD

This study employed a quantitative approach with a Pre-Experimental Design method, a non-experimental research design, as it only used one group or class and no control or comparison group. The research design employed a One-Group Pretest-Posttest Design, which uses only one sample group. This study was conducted by administering a pretest before the treatment, followed by a posttest after the treatment.

In this study, the population studied was all tenth-grade students at Gajah Mada High School, Bandar Lampung, who were taking geography. The sample selected for this study was one class, namely class X3, consisting of 35 students. This class was selected based on its relatively lower average grade compared to other classes.

The independent variable in this study was the Think Pair Share (TPS) cooperative learning model, a learning model that emphasizes collaboration among students through three main stages: Think (individual thinking), Pair (pair discussion), and Share (group sharing). Student engagement was measured using a questionnaire, using a Likert scale (1-5) to measure engagement. The dependent variable in this study was student geography learning outcomes, where the success of the learning process was indicated by improved student learning outcomes in the Atmospheric Dynamics topic. Learning outcomes were measured using a pretest-posttest method, using an ordinal scale (1-100) as the assessment measure.

The research procedure began with the preparation stage, which involved developing research instruments in the form of a geography learning outcome test and a student engagement questionnaire. The instruments were then validated and piloted to ensure their feasibility and reliability. Next, during the implementation stage, the study was conducted with 10th-grade students at Gajah Mada High School in Bandar Lampung using a One-Group Pretest-Posttest design. Students were given a pretest to assess their initial abilities. The geography lesson on Atmospheric Dynamics was then implemented using the Think Pair Share (TPS) cooperative learning model, which included individual thinking, pair discussions, and group discussion sharing. After the learning process was completed, students were given a posttest to measure learning outcomes following the TPS implementation.

The data obtained were analyzed quantitatively. Descriptive analysis was used to describe the mean value, standard deviation, and score increase between the pretest and posttest. Prior to hypothesis testing, prerequisite tests were conducted, including normality and linearity tests. If the data met the assumptions of normality and linearity, the analysis continued with a t-test to determine differences in learning outcomes before and after the treatment. In addition, simple linear regression analysis was used to measure the effect of student engagement on learning outcomes, and a two-way ANOVA test was used to determine differences in learning outcomes based on student engagement and gender.

This section presents the results of data analysis, which includes several stages, namely descriptive analysis to provide a more detailed picture of student learning outcomes, analysis prerequisite tests to ensure that the data meets the assumptions required before testing, and hypothesis testing.

RESULTS AND DISCUSSION

Descriptive Analysis

This study began with a pretest administered to 10th-grade students at Gajah Mada Senior High School, Bandar Lampung, to determine their initial abilities in Geography. Based on the descriptive analysis of the pretest data, the average score was 77.03 with a standard deviation of 14.531, a minimum score of 20, and a maximum score of 88. After implementing the TPS (Tracking Paired Model), the posttest scores increased to an average of 85.03, a standard deviation of 11.328, a minimum score of 48, and a maximum score of 96. This difference

indicates an increase in learning outcomes and a more even distribution of scores after students participated in the TPS learning model.

The improvement in learning outcomes was also reinforced through the N-Gain calculation. The average N-Gain value of 34.83%, which is in the moderate category, shows that learning with TPS is able to increase student understanding proportionally. At the minimum value, an increase from 20 to 48 results in an N-Gain of 35% (moderate category). Meanwhile, at the maximum value, an increase from 88 to 96 gives an N-Gain of 66.67% (high category). Thus, it can be concluded that the TPS learning model not only improves the average class achievement but also has a positive impact on students with low and high abilities.

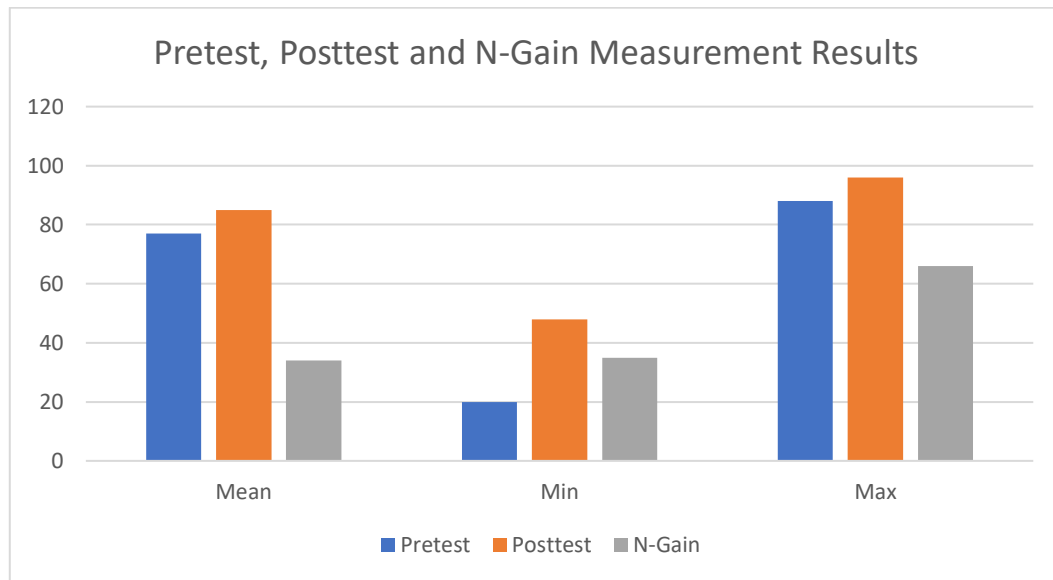


Figure 1. Comparison of Pretest and Posttest Results
(Source: Research Results, 2025)

Further analysis by gender also showed an improvement in learning outcomes for the majority of students. Of the 16 male students, 11 (69%) experienced an improvement in learning outcomes, while 5 (31%) showed no significant change. Among the 19 female students, improvement was more dominant, with 15 (79%) affected and only 4 (21%) unaffected. These findings demonstrate that TPS learning has a positive impact on both male and female students, although the proportion of improvement was higher among female students.

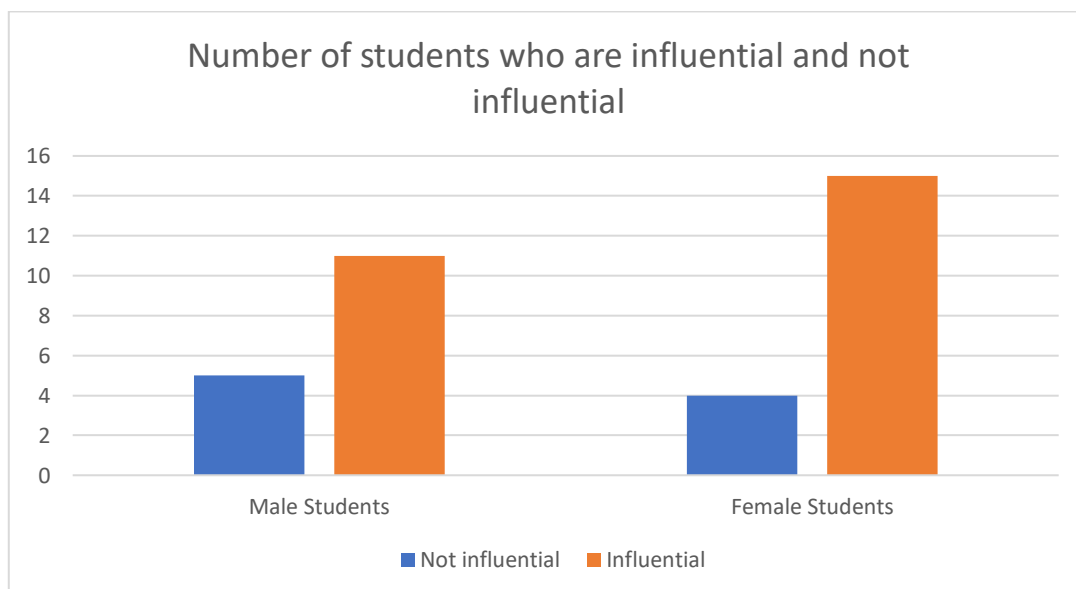


Figure 2. Comparison of Posttest Results for the Control and Experimental Classes
(Source: Research Results, 2025)

Data Analysis Prerequisite Test Results

Before conducting the hypothesis test, prerequisite tests were first conducted, namely normality and linearity tests. For the normality test, the analysis was conducted using SPSS version 25 using the Shapiro-Wilk method because the sample size was less than 50 respondents. Based on the test results, the significance value for the pretest data was 0.185 and for the posttest it was 0.059. Both are above the 0.05 significance level, thus concluding that the pretest and posttest data are normally distributed. The Kolmogorov-Smirnov test also showed a significance value above 0.05 for the pretest, although the posttest showed a lower value. However, the primary reference for the Shapiro-Wilk method confirms that the data distribution can be categorized as normal. Thus, the assumption of normality is met, making the data suitable for parametric statistical analysis.

Table 2. Normality test results

Test of Normality							
	<i>Kolmogorof-Smirnov^a</i>			<i>Shapiro-Wilk</i>			
	<i>Statistic</i>	<i>Df</i>	<i>Sig.</i>	<i>Statistic</i>	<i>Df</i>	<i>Sig</i>	<i>Ket</i>
Pretest	,094	35	,200*	,957	35	,185	Normal
Posttest	,153	35	,038	,941	35	,059	Normal

Source: Research results, 2025

Furthermore, in the linearity test, a test was conducted to ensure that the relationship between the independent variable, namely the implementation of the Think Pair Share (TPS) type cooperative learning model, with the dependent variable in the form of student Geography learning outcomes was linear. The results of the linearity test showed a significance value of 0.307 in the linearity test and 0.985 in the deviation from linearity. Both were greater than the 0.05 significance level, so it can be concluded that the relationship between the two variables was linear and there was no deviation from a straight line. Thus, the linearity assumption was met and a simple linear regression analysis could be continued to test the effect of the TPS model implementation on student learning outcomes.

Table 3. Linearity test results

ANOVA Table							
Posttest*			Sum of Squares	Df	Mean Square	F	Sig.
Pretest	Between	(combined)	518,616	10	51,862	,324	,996
	Groups	Linearity	174,758	1	174,758	1,091	,307
		Deviation from Linearity	343,857	9	38,206	,239	,985
	Within Groups		3844,356	24	160,181		
	Total		4362,971	34			

Source: Research results, 2025

Hypothesis Test Results

Based on the results of the Paired Sample t-Test, a significance value of $p < 0.001$ was obtained, indicating a significant difference between the pretest and posttest results. This proves that the implementation of the Think Pair Share (TPS) cooperative learning model has a real effect on improving the Geography learning outcomes of class X 3 students of SMA Gajah Mada Bandar Lampung.

Table 4. Paired Sample t-Test Results

Paired Samples Correlations					
		N	Correlation	Significance	
				One-Sided p	Two-Sided p
Pair 1	Pretest & Posttest	35	.768	<.001	<.001

Source: Research results, 2025

Based on the results of the Independent Samples t-Test, a Sig. (2-tailed) value of 0.004 (<0.05) was obtained, which means there is a significant difference between the learning outcomes of male and female

students. The Cohen's d effect size value of -1.052 is in the large category, so the difference in learning outcomes between the two groups can be said to be statistically strong after the implementation of TPS.

Table 5. Independent Samples t-Test Results

Independent Samples Test									
t-test for Equality of Means									
				Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		t	df	One-Sided p	Two-Sided p			Lower	Upper
Nilai_Posttest	Equal variances assumed	-3,100	33	0,002	0,004	-10,645	3,43	-17,630	-3,659
	Equal variances not assumed	-2,875	17,053	0,005	0,010	-10,645	3,70	-18,454	-2,836

Source: Research results, 2025

Table 6. Independent Samples Effect Sizws Results

Independent Samples Effect Sizes				
			95% Confidence Interval	
		Standardizer ^a	Point Estimate	
Nilai_Posttest	Cohen's d	10,119	-1,052	-1,756
	Hedges' correction	10,356	-1,028	-1,716
	Glass's delta	4,081	-2,608	-3,670

Source: Research results, 2025

Based on the results of the simple linear regression test, an F value of 11.918 was obtained with a significance level of 0.002 (<0.05). This indicates that student engagement has a significant effect on Geography learning outcomes, so the higher the student engagement in learning, the better the learning outcomes.

Table 7. Simple Linear Regression Analysis Results

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	F
1	Regression	146,350	1	146,350	11,918
	Residual	405,217	33	12,279	
	Total	551,567	34		

a. Dependent Variable: Posttest

b. Predictors: (Constant), Angket

Source: Research results, 2025

Based on the results of the Two-Way ANOVA test, it was found that gender significantly influenced learning outcomes with an F value of 6.883 and Sig. = 0.014 (<0.05). Meanwhile, student engagement (Sig. = 0.216) and the interaction between gender and engagement (Sig. = 0.419) did not have a significant effect. Thus, gender was proven to be a more dominant factor influencing learning outcomes than student engagement.

Table 8. ANOVA Test Results (Two Way)

Tests of Between-Subjects Effects					
Dependent Variable: Posttest					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1393,863 ^a	5	278,773	2,723	,039
Intercept	141154,523	1	141154,523	1378,690	<,001
Jenis_Kelamin	704,674	1	704,674	6,883	,014
Tingkat_Keterlibatan	330,736	2	165,368	1,615	,216
Jenis_Kelamin * Tingkat_Keterlibatan	183,622	2	91,811	,897	,419
Error	2969,108	29	102,383		
Total	257408,000	35			
Corrected Total	4362,971	34			
a. R Squared = ,319 (Adjusted R Squared = ,202)					

Source: Research results, 2025

Discussion

The analysis showed a significant difference between student learning outcomes before and after implementing the Think Pair Share (TPS) cooperative learning model. Therefore, it can be concluded that the Think Pair Share (TPS) cooperative learning model is effective in improving the geography learning outcomes of grade 10 students at Gajah Mada High School, Bandar Lampung.

These results align with Vygotsky's theory (Suprijono, 2009), which states that students exist within a sociohistorical context, where experiences in social interactions are a crucial mechanism for cognitive development. During the pairing and sharing stages, students receive scaffolding from peers who better understand concepts, helping them develop previously limited cognitive abilities. Piaget's theory also supports these findings, as according to Piaget (Slavin, 2010), knowledge about social devices, language, values, morals, and symbol systems can only be learned through interaction with others. Therefore, the interactions in the TPS model provide space for students to actively construct knowledge through small group collaboration.

The results of this study are also supported by empirical findings (Budiana, 2024), which show that the implementation of TPS (Think Pair Share) can improve student achievement in Geography. Similar research conducted by (Priyono, 2021) found that the use of the Think Pair Share (TPS) cooperative learning model positively contributed to improving high school students' Geography learning achievement. The similarity of these research results demonstrates that the Think Pair Share (TPS) cooperative learning model is not only relevant for science subjects but also effective for teaching abstract concepts, including atmospheric concepts in Geography.

The results showed differences in geography learning outcomes between male and female students after the implementation of the Think Pair Share (TPS) cooperative learning model. These differences appeared significant and had a strong influence on the academic achievement of both groups. This confirms that gender remains a crucial factor to consider when analyzing the success of a learning model.

Several previous studies support this finding (Wardani, 2021), which found a direct effect of gender on learning achievement, influenced by differences in brain structure between males and females. These biological differences impact students' mindsets and learning strategies, resulting in girls generally showing a more positive relationship to academic achievement than boys.

On the other hand, (Yuliani, 2020) explains that although male students often appear more active in class, this activeness does not always support the learning process, as it sometimes tends to lead to disruptive activities. Meanwhile, female students are more consistent and motivated in completing academic assignments, positively impacting their learning outcomes.

The results of a simple linear regression analysis indicate that student engagement, as measured by a questionnaire, has a significant influence on geography learning outcomes. Based on Gagne's learning theory, these results can be explained by the combination of learning as a collection of processes internal to each individual as a result of the transformation of stimuli originating from external events in the individual's

environment (conditions). To make these external conditions more meaningful, they should be organized into a sequence of learning events (methods or treatments) (Basyir et al., 2022).

The process of reflection and discussion among group members also stimulates different ways of thinking, encourages knowledge sharing, and increases learning efficiency (Zhou & Colomer, 2024). This aligns with the statement that think-pair-share influences interactions between students by developing analytical skills and prioritizing communication within study groups. Using think-pair-share has an impact on geography learning outcomes (Nurhijjah et al., 2024).

However, in this study, gender dominated the influence on student learning outcomes. This finding suggests that student engagement in learning, although proven to have a significant effect in the regression analysis, was not strong enough to demonstrate a greater influence than gender, which was found to have a greater influence on student learning outcomes.

Factors that influence the learning process are also assumed to influence learning outcomes (Putri et al., 2024). In line with Gardner's theory of Multiple Intelligences, each individual possesses distinct personal intelligences that can develop according to their individual potential and talents (Samsudin, 2020). Therefore, gender differences can reflect variations in learning styles, motivation, and tendencies toward utilizing specific intelligence potentials. It is therefore reasonable to conclude that this study demonstrates that gender is a more dominant factor than student involvement in determining learning outcomes.

CONCLUSION

Based on the research results, the implementation of the Think Pair Share (TPS) cooperative learning model has been proven effective in improving Geography learning outcomes of SMA Gajah Mada Bandar Lampung students. There are significant differences between learning outcomes before and after the TPS implementation, as well as differences in achievement between male and female students. Student engagement also influences learning outcomes, but gender is a more dominant factor than the level of engagement in determining student academic achievement.

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