

The Effect of The Reciprocal Teaching Model on The Science Learning Outcomes of Grade V Students of Elementary School Inpres 12/79 Polewali, Bone District

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Article	Abstract
<p>Keywords: Reciprocal Teaching; Learning Outcomes; IPAS.</p> <p>Article History Received: Nov 12, 2025 Reviewed: Des 11, 2025 Accepted: Jan 11, 2026 Published: Feb 03, 2026</p>	<p><i>This study uses a quantitative approach that aims to determine the effect of the Reciprocal Teaching model on the learning outcomes of fifth-grade students of SD Inpres 12/79 Polewali, Bone Regency. The type of research used is Pre-Experimental Design with One-Group Pretest-Posttest design. The research variables consist of the Reciprocal Teaching model as the independent variable and the learning outcomes of the sciences as the dependent variable, with a total of 24 students as subjects. The data collection technique uses a learning outcome test before and after the application of the Reciprocal Teaching model. Data analysis was carried out through descriptive and inferential statistics. The results showed that the average pretest score was 41.46 and the posttest was 76.88, resulting in an increase of 35.42. The results of the hypothesis test showed a significance value of $0.000 < 0.05$. Thus, it can be concluded that the Reciprocal Teaching model has a significant effect on the learning outcomes of fifth-grade students of SD Inpres 12/79 Polewali, Bone Regency.</i></p>



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INTRODUCTION

Education is a conscious and planned effort to develop the potential of students to improve the quality of human resources. In its implementation, the learning process must take place interactively, inspiringly, and encourage active student participation as stipulated in Permendikbudristek Number 16 of 2022. Therefore, student-centered learning is needed to be able to develop critical thinking and problem-solving skills (Novianti, 2024).

One of the subjects that plays a role in developing these abilities is Natural and Social Sciences (IPAS). IPAS is an integrated learning that combines the concepts of natural science and social sciences (Satriani & Zafira, 2025). This learning not only emphasizes the mastery of knowledge, but also develops analytical skills,

problem-solving, and decision-making based on phenomena in the surrounding environment (Ansya & Salsabilla, 2024). However, in practice, social studies learning still faces various obstacles, especially low student learning outcomes.

Based on the results of the pre-research at SD Inpres 12/79 Polewali, Bone Regency, it is known that out of 24 students, only 10 students (42%) have reached the level of completeness, while 14 students (58%) have not completed it. In addition, students' learning activities tend to be passive, less involved in discussions, and have difficulty understanding and relating the material to daily life. This condition is influenced by the use of a learning model that is still teacher-centered so that student involvement in the learning process is not optimal.

To overcome these problems, a learning model is needed that can increase student activity and learning outcomes. One of the models that can be used is *Reciprocal Teaching*, which emphasizes predicting, questioning, clarifying, and summarizing activities in the learning process (Palincsar, 2018). This model provides students with the opportunity to actively participate and practice critical thinking skills through group interactions. In addition, the *Reciprocal Teaching* model is also able to develop high-level thinking skills because students are trained to understand, connect, and conclude learning materials (Alistiana et al., 2020).

Several previous studies have shown that *the Reciprocal Teaching* model has a positive effect on student learning outcomes. Research by Wati (2021) shows an increase in student learning completeness after the application of this model. In addition, Hutauruk et al. (2021) found that students' average scores increased significantly after the use of *Reciprocal Teaching*. Maulida's research (2024) also shows that this model has a significant effect on students' thinking skills.

Therefore, this study aims to analyze the influence of *the Reciprocal Teaching model* on the learning outcomes of IPAS students in grade V of SD Inpres 12/79 Polewali, Bone Regency.

METHOD

This study uses a quantitative approach with a *type of pre-experimental design*. The research design used was *one group pretest-posttest design* to determine the influence of *the Reciprocal Teaching model* on the learning outcomes of social studies students. The research was carried out at SD Inpres 12/79 Polewali, Bone Regency.

The population in this study is all class V students totaling 24 people. The sampling technique uses *saturated sampling*, so that the entire population is used as a research sample.

The variables in this study consist of an independent variable, namely *the Reciprocal Teaching model*, and a bound variable, namely the learning outcomes of students' social studies.

The data collection technique uses tests consisting of *pretest* and *posttest* to measure student learning outcomes before and after implementation. The research instrument is in the form of multiple-choice questions and descriptions that have gone through validity and reliability tests.

Data analysis techniques use descriptive and inferential statistics. Descriptive analysis was used to determine the average score and percentage completeness of student learning outcomes, while inferential analysis was used to test hypotheses through normality tests and *paired sample t-tests* with the help of SPSS at a significance level of 0.05.

RESULTS AND DISCUSSION

Results

The two main aspects discussed in this section include descriptive statistical analysis and inferential statistical analysis, which are described as follows:

1. Statistical Analysis

Descriptive analysis was used to obtain the learning outcomes of IPAS students in grade V of SD Inpres 12/79 Polewali, Bone Regency through the initial test (*pretest*) and final test (*posttest*). *The pretest* is carried out to find out the learning outcomes of the students before the implementation, while *the posttest* is to find out the learning outcomes of the students' social studies after the implementation of the *Reciprocal Teaching model* using the SPSS 22 program. The results of *the pretest* and *posttest* can be seen as follows:

a. Pretest Data on Student Social Science Learning Outcomes

The pretest was held on Monday, February 9, 2026 with a sample of 24 students. After the IPAS *pretest* data is obtained, the data is processed using *the IBM SPSS Statistics Version 22* program to describe the description of the student's *pretest* score. The results of *the pretest analysis* are presented in the following table:

Table 4.1 Descriptive Analysis of *Pretest Scores* of Student Learning Outcomes

Descriptive Statistics	<i>Pretest</i>
Number of Samples (n)	24
Track-Track (<i>Mean</i>)	41,46
Median	40,00
Mode	40
Standard Deviation	6,991
Minimum	30
Maximum	50

Source : *IBM SPSS Statistic Version 22*

In table 4.1 above, it can be seen that based on the results of the data processing of 24 students, the average score was 41.46, the median score was 40.00, and the mode was 40. Meanwhile, the standard deviation obtained is 6,991 with a minimum value of 30 and a maximum value of 50. If the value of IPAS learning outcomes for grade V students of SD Inpres 12/79 Polewali Bone Regency is grouped into 5 categories, the frequency distribution will be obtained in the following table.

Table 4.2 Distribution of Frequency and Percentage of *Students' Pretest Scores*

No.	Shoes	Category	<i>Pretest</i>	
			Frequency	Percentage
1	80 – 100	Very High	0	0%
2	66 – 79	Height	0	0%
3	56 – 65	Medium	0	0%
4	41 – 55	Low	10	41,7%
5	0 – 40	Very Low	14	58,3%
Quantity			24	100%

Source: Student Social Studies learning outcome data

Based on table 4.2 above, it can be seen that there are no students who are in the very high (80–100), high (66–79), or medium (56–65) categories. Some students were in the low category (41–55), which was 10 students (41.7%), while most students were in the very low category (0–40), which was 14 students (58.3%). Thus, it can be concluded that the learning outcomes of social studies students at the *pretest* stage are still in the very low category.

b. Posttest Data on Student Social Studies Learning Outcomes

The *posttest* was held on Friday, February 13, 2026 with a sample of 24 students. After the IPAS *pretest* data is obtained, the data is processed using the *IBM SPSS Statistics Version 22* program to describe the description of the student's *posttest* score . The results of the *Posttest analysis* are presented in the following table:

Table 4.3 Descriptive Analysis of *Posttest Scores* of Student Learning Outcomes

Descriptive Statistics	<i>Posttest</i>
Number of Samples (n)	24
Track-Track (<i>Mean</i>)	76,88
Median	75,00
Mode	75
Standard Deviation	7,344
Minimum	68
Maximum	90

Source : IBM SPSS Statistic Version 22

Based on table 4.3 above, the average score is 76.88 with a median value of 75.00 and the mode is 75. Meanwhile, the standard deviation obtained is 7,344 with a minimum value of 68 and a maximum value of 90. If the IPAS *posttest* score is grouped into five categories, the frequency distribution will be obtained in the following table.

Table 4.4 Distribution of Frequency and Percentage of *Students'* Posttest Scores

No.	Shoes	Category	<i>Posttest</i>	
			Frequency	Percentage
1	80 – 100	Very High	9	37,5%
2	66 – 79	Height	11	45,8%
3	56 – 65	Medium	4	16,7%
4	41 – 55	Low	0	0%
5	0 – 40	Very Low	0	0%
Quantity			24	100%

Source: Student Social Studies learning outcome data

Based on table 4.4 above, it can be seen that in the very high category (80–100) there are 9 students (37.5%). In the high category (66–79) there were 11 students (45.8%), while in the medium category (56–65) there were 4 students (16.7%). Meanwhile, there are no students who are in the low (41–55) or very low (0–40) categories. Thus, it can be concluded that the learning outcomes of social studies students at the *posttest* stage are in the high category.

2. Inferential Statistical Analysis

The results of inferential statistical analysis are intended to answer the research hypothesis that has been formulated. Before conducting an inferential statistical analysis, a prerequisite test is carried out, namely the normality test.

a. Normality Test

Normality tests are performed to determine whether the data has a normal distribution or not. This test was processed using *the IBM SPSS Statistics Version 22* program with *the Shapiro-Wilk method* because the sample count was less than 50. The data is said to be normally distributed if the probability value on the *Shapiro-Wilk* test output is greater than the established significance level, which is 5% (0.05). A summary of normality test results for *pretest* and *posttest data* can be seen in the following table.

Table 4.5 Normality Test Results with *Shapiro-wilk Technique*

Data	Probability Value	Remarks
<i>Pretest</i>	0,10	0,884 > 0,05 = Normal
<i>Posttest</i>	0,091	0,929 > 0,05 = Normal

Source : IBM SPSS Statistic Version 22

Table 4.5 presents the results of the normality test on *the pretest* and *posttest data* of the learning outcomes of IPAS students in grade V before and after the implementation of *the Reciprocal Teaching* model. The normality test is carried out to find out whether the data is normally distributed as one of the requirements in parametric statistical analysis. The data analysis in this study was carried out using *the IBM SPSS Statistics Version 22* program. Based on the results of the analysis, the probability value (sig.) for pretest data was 0.884 and posttest data was 0.929. The two probability values are greater than the significance level of 0.05, so it can be concluded that the pretest and posttest data are normally distributed. Thus, the data has met the assumption of normality and can be further analyzed using a parametric statistical test, i.e. the t-test.

b. Uji Hypothesis

Hypothesis tests were carried out to determine whether there was an influence on students' social studies learning outcomes before and after the use of *the Reciprocal Teaching* model. In this study, the analysis was carried out using *the Paired Sample t-Test* test through *the IBM SPSS Statistics Version 22* program by comparing *tcal* and *ttable* values. The probability level used in this test is 5% or 0.05. The test results showed a significant difference between the two paired data if the significance value was less than the specified probability value (Sig < 0.05). A summary of *the Paired Sample t-Test* results for *pre-test* and *post-test data* can be seen in the following table.

Table 4.6 Hypothesis Test Results with *Paired Technique T-test Sample*

Data	Nilai Sig.	Stuttgart	Table	Remarks
<i>Pretest</i>	0,000	59,461	2,069	0.000 < 0.05 =
–				There are
<i>Posttest</i>				Differences
				59,461 > 2,068 =
				There is an Influence

Source : IBM SPSS Statistic Version 22

Table 4.6 shows the results of the hypothesis test on the difference in *pretest* and *posttest scores* of social studies learning outcomes of grade V students analyzed using *IBM SPSS Statistics Version 22*. This hypothesis test aims to find out whether there is a significant difference between *pretest* and *posttest scores* after the application of the Reciprocal Teaching *model*. Based on the results of the *paired sample t-test*, a significance value (Sig. 2-tailed) of 0.000 was obtained, which is smaller than the significance level of 0.05, so it can be concluded that there is a significant difference between *the pretest* and *posttest* values. In addition, because the *average score of the posttest* (76.88) is greater than the *average of the pretest* (41.46), it can be concluded that the Reciprocal Teaching *model* has a significant effect on the learning outcomes of social studies of grade V students.

Discussion

The purpose of this study is to determine the effect of the application of *the Reciprocal Teaching model* on the learning outcomes of social studies students, which is reviewed through a comparison of *pretest* and *posttest scores*. The data from the research results were then analyzed using the *IBM SPSS Statistics Version 22* program to determine whether there was a significant influence of the application of the Reciprocal Teaching *model* on students' social studies learning outcomes. Based on the results of the research, the discussion is as follows:

1. How High Are the Learning Outcomes of Social Science Students of Grade V of SD Inpres 12/79 Polewali, Bone Regency Before and After the Implementation of the Reciprocal Teaching Model

The results of the study showed that the learning outcomes of IPAS students in grade V of SD Inpres 12/79 Polewali, Bone Regency after the implementation of *the Reciprocal Teaching* learning model increased compared to before the implementation of the model.

This can be seen from the increase in the average score of students from 41.46 in the *pretest* to 76.88 in the *posttest*, which shows that the score has exceeded the KKTP of 68. Thus, the use of *the Reciprocal Teaching* learning model can help improve students' social studies learning outcomes. This increase occurred due to a shift in the role of students from passive recipients to active readers, where in the *summarizing stage* students summarized the core of the material that had been learned, in the *questioning stage* students composed and asked questions related to the material, in the clarifying stage students clarified or explained parts of the material that were not understood, and in the *predicting stage* Students make predictions or conjectures about the material to be studied next.

The findings of the study show that the application of *the Reciprocal Teaching* model is able to improve student learning outcomes. This is supported by Palincsar (2018) who states that *Reciprocal Teaching* encourages understanding through interaction and active dialogue, which in this study can be seen from the increased involvement of students during the learning process.

2. Differences in Social Science Learning Outcomes of Grade V Students of SD Inpres 12/79 Polewali, Bone Regency Before and After the Implementation of *the Reciprocal Teaching Model*

Prior to the implementation of the *Reciprocal Teaching model*, the IPAS learning process was still dominated by teachers so that students tended to be passive, less involved in discussions, and rarely asked questions or expressed opinions, which had an impact on students' low understanding with an average *pretest score* of 41.46 which was still below the KKTP which was 68. However, after the implementation of the *Reciprocal Teaching* model, there was a significant change where students became more active through *summarizing, questioning, clarifying, and predicting activities*, students began to dare to discuss, ask, and express opinions so that learning interactions became more lively and meaningful, which had an impact on improving student learning outcomes.

After the learning process is carried out using *the Reciprocal Teaching model*, students are again given a final test (*posttest*) to find out the extent of the improvement in learning outcomes obtained. Based on the results of the *posttest*, the average score of students was 76.88. When compared to the average score of *the pretest*, there was an increase of 35.42 points. The increase shows that the application of *the Reciprocal Teaching model* has a positive impact on the learning outcomes of social studies students.

The results of the study showed that there were differences in learning outcomes before and after the application of *the Reciprocal Teaching* model. This finding is in line with Ulfa (2024) who stated that questioning and explaining activities can improve student understanding, which in this study is shown through improved learning outcomes after treatment is given.

3. The Effect of the Implementation of *the Reciprocal Teaching Model* on the Learning Outcomes of Social Science Students in Grade V of SD Inpres 12/79 Polewali, Bone Regency

Based on the results of the study, the average student *pretest* score was 41.46 and the average *posttest* score was 76.88 which showed an increase in learning outcomes after the implementation of the learning model. Furthermore, based on inferential statistical analysis, it was found that there was a significant influence on the learning outcomes of social studies students before and after the use of *the Reciprocal Teaching* model in the learning process. The hypothesis test was carried out using a t-test with *the Paired Sample t-Test* technique which showed a *t*-cal value of 59.461. With degrees of freedom (df) = 23, a value of $t_{\alpha/2}$ is obtained of 2.068. In addition, the significance value of 0.000 is smaller than the significance level of 0.05 ($0.000 < 0.05$), so H_0 is rejected and H_1 is accepted. Thus, it can be concluded that there is a significant influence of the use of *the Reciprocal Teaching model* on the learning outcomes of IPAS students in grade V of SD Inpres 12/79 Polewali, Kajua District, Bone Regency.

The results of the hypothesis test show that *the Reciprocal Teaching model* has a significant effect on student learning outcomes. This finding is supported by Wati (2021) who states that this model is effective in increasing active participation and meaningful student understanding, thus having an impact on improving learning outcomes.

CONCLUSION

Based on the results of the research, it can be concluded that the application of *the Reciprocal Teaching model* has an effect on the learning outcomes of social studies students in grade V of SD Inpres 12/79 Polewali, Bone Regency. This is shown by an increase in the average score of students from 41.46 (low category) before implementation to 76.88 after implementation, which has reached the Learning Goal Achievement Criteria (KKTP). In addition, the results of *the paired sample t-test* showed a significance value of $0.000 < 0.05$, which means that there is a significant difference and influence between learning outcomes before and after the application of *the Reciprocal Teaching* model.

Suggestions

Based on the results of the research, it is recommended that teachers can apply *the Reciprocal Teaching* model in learning because it is proven to be able to increase student activity and learning outcomes. Students are also expected to be more active in participating in the learning process through summarizing, asking, clarifying, and predicting activities. In addition, researchers are further advised to develop research related to *the Reciprocal Teaching* model in subjects, educational levels, or with the use of different learning media.

ACKNOWLEDGMENTS

I would like to thank all parties who have provided support and contributions in the preparation of this journal, especially to the supervisors, colleagues who helped the research process, and families who always give encouragement and prayers. Without their help and support, this journal would not have been completed properly.

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