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The Effect of Student Teams Achievement Divisions (STAD) on the Learning Outcomes of Grade VIII Students in Indonesian Language at MTs Negeri 2 Kepahiang

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ABSTRACT

Cooperative learning models have been widely recognized as effective strategies to enhance student achievement, yet their application in Indonesian language instruction at the junior secondary level remains limited. This study aimed to examine the effect of the Student Teams Achievement Division (STAD) cooperative learning model on the learning outcomes of eighth-grade students at MTs Negeri 2 Kepahiang. Employing a quasi-experimental design with a non-equivalent control group, the study involved two classes, with one serving as the experimental group taught using STAD (n = 30) and the other as the control group taught using conventional methods (n = 26). Data were collected through pretests and posttests consisting of 15 multiple-choice items aligned with the curriculum, validated through Pearson's Product-Moment correlation, and tested for reliability using Cronbach's Alpha. Statistical analysis using IBM SPSS version 25 included normality and homogeneity tests, paired-sample t-tests, independent-sample t-tests, and N-Gain analysis at a significance level of $p < 0.05$. The results showed that the experimental group achieved a significantly higher posttest mean score (M = 12.80) compared to the control group (M = 7.34), with the independent-sample t-test confirming a significant difference (p = 0.000). These findings indicate that the STAD model effectively improves student achievement by fostering peer collaboration, active engagement, and collective responsibility for learning outcomes. The novelty of this research lies in its application of STAD in Indonesian language learning at the junior secondary level, providing new insights into cooperative learning beyond science and mathematics, where it has been predominantly studied. The implications suggest that educators and policymakers should integrate cooperative learning models such as STAD into instructional practices to enhance academic performance and social competencies essential for 21st-century learning.

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Introduction

Student learning outcomes remain a central focus in educational research, particularly in relation to teaching models that can enhance both engagement and academic achievement. Numerous studies have shown that low performance in subjects such as Indonesian language is often linked to teacher-centered approaches, limited student participation, and lack of engaging instructional strategies (Irnidayanti & Fadhilah, 2023; Marzuki et al., 2024; Puspitasari, 2024).

Traditional lecture-based teaching often results in passive learning environments where students struggle to develop critical thinking, collaborative skills, and sustained motivation (Do et al., 2023; Mutanga, 2024; Sukackė et al., 2022). In the Indonesian context, these issues are evident in the consistent findings that students perceive Indonesian language classes as monotonous, difficult, and disconnected from their daily lives, leading to underperformance and lack of interest (Akkerman & Meijer, 2011; Andriana & Evans, 2020; Zen et al., 2023). Given this reality, it becomes crucial to explore more dynamic and interactive learning models that promote active participation and foster improved learning outcomes.

Cooperative learning has been recognized globally as one of the most effective approaches to increase student achievement while simultaneously cultivating social and interpersonal skills. Cooperative learning is grounded in social constructivist theory, emphasizing the active construction of knowledge through interaction, collaboration, and shared responsibility (Lenkauskaitė et al., 2020; Siller & Ahmad, 2024; Yang, 2023). Research across diverse educational contexts confirms that cooperative learning not only improves cognitive outcomes but also enhances communication, self-confidence, and problem-solving abilities (Eskiyurt & Özkan, 2024; Lorente et al., 2024; Zhou & Colomer, 2024). Among the various cooperative learning models, Student Teams Achievement Divisions (STAD) has emerged as a particularly effective and widely adopted method. Developed by Slavin (1995), STAD is considered one of the simplest and most applicable cooperative learning strategies, especially suitable for teachers transitioning from traditional to collaborative pedagogical practices (Siller & Ahmad, 2024; Silva et al., 2021; Simkhada & Bhattarai, 2023). In STAD, students are organized into heterogeneous groups of four to five members, collaborating to understand the lesson material, complete assignments, and improve each other's learning outcomes. This structure fosters peer tutoring, accountability, and motivation, as each member's success contributes to the team's collective performance (Ángeles López-Cabarcos et al., 2022; Aranzabal et al., 2022; Zamiri & Esmaeili, 2024).

The effectiveness of STAD has been widely documented in various subject areas, including language learning. Studies have consistently demonstrated that STAD improves reading comprehension, speaking skills, and overall language performance by engaging students in meaningful interaction and cooperative problem-solving (Darling-Hammond et al., 2020; Dwivedi et al., 2023; Siller & Ahmad, 2024). Moreover, empirical findings from both international and Indonesian contexts highlight that STAD increases student motivation and participation, creating more positive classroom climates that encourage active learning (Amiruddin et al., 2023; Marzuki et al., 2024; Peng et al., 2022). In Indonesian language learning specifically, STAD has been reported to help students develop greater interest and proficiency in writing, reading, and oral communication, thereby addressing long-standing concerns about students' low achievement and disengagement (Fernandes et al., 2024). Nevertheless, despite these promising findings, the application of STAD in Indonesian language subjects at the junior high school level remains underexplored, particularly in rural and semi-urban schools where challenges of student motivation and learning achievement are most pronounced.

Although cooperative learning and STAD have been widely studied, several research gaps remain. First, previous studies have primarily focused on elementary or higher education contexts, leaving junior high school students relatively underrepresented in the literature

(Boateng et al., 2024; Ferrão, 2022; Maulana et al., 2023). Second, many studies have emphasized cognitive achievement outcomes but overlooked the motivational and affective dimensions of learning that are equally critical for long-term academic success (Shi & Qu, 2022; Singh et al., 2022; Urhahne & Wijnia, 2023). Third, limited empirical work has been conducted in Indonesian language learning, especially in integrating STAD with culturally contextualized materials, which could further enhance its relevance and effectiveness (Hanifa et al., 2024; Monib et al., 2025; Sakti et al., 2024). Therefore, this study aims to investigate the influence of the Student Teams Achievement Divisions (STAD) model on the learning outcomes of eighth-grade students in Indonesian language subjects at MTs Negeri 2 Kepahiang. By focusing on this context, the study seeks to fill the existing gap in cooperative learning research and provide evidence on how STAD can improve student performance and engagement in Indonesian language learning.

Methods

This study employed a quantitative quasi-experimental design with a non-equivalent control group to examine the effect of the Student Teams Achievement Division (STAD) cooperative learning model on the Indonesian language learning outcomes of eighth-grade students at MTs Negeri 2 Kepahiang. The research population comprised three classes, of which one class (n = 30) served as the experimental group, another (n = 26) as the control group, and one class (n = 30) as the validity testing group. The experimental group was taught using the STAD model, while the control group received instruction through conventional teacher-centered methods. Data were collected through pretests and posttests consisting of 15 multiple-choice questions aligned with the Indonesian language curriculum, and the test items were validated using Pearson's Product-Moment correlation, with all items meeting the validity criteria (r > 0.361). Instrument reliability was confirmed with Cronbach's Alpha, indicating acceptable internal consistency. Data analysis was conducted using IBM SPSS Statistics version 25, including descriptive statistics, normality and homogeneity tests, paired-sample t-tests to measure within-group differences, and an independent-sample t-test to assess between-group differences at a significance level of $p < 0.05$. Ethical considerations were observed by obtaining permission from the school, ensuring voluntary participation, and maintaining students' anonymity and confidentiality throughout the process. This methodological approach provided a rigorous and ethically sound framework for determining whether the STAD cooperative learning model significantly improved students' learning outcomes compared to conventional teaching methods.

Results and Discussion

Descriptive Statistics of the Experimental and Control Groups
The descriptive analysis of pretest and posttest scores for both groups is presented in Table 1. The experimental group, which was taught using the STAD model, showed an increase in the mean score from 57.33 in the pretest to 78.00 in the posttest. In contrast, the control group taught with conventional methods improved from 56.15 to 68.85. These findings indicate greater improvement in the experimental group compared to the control group.
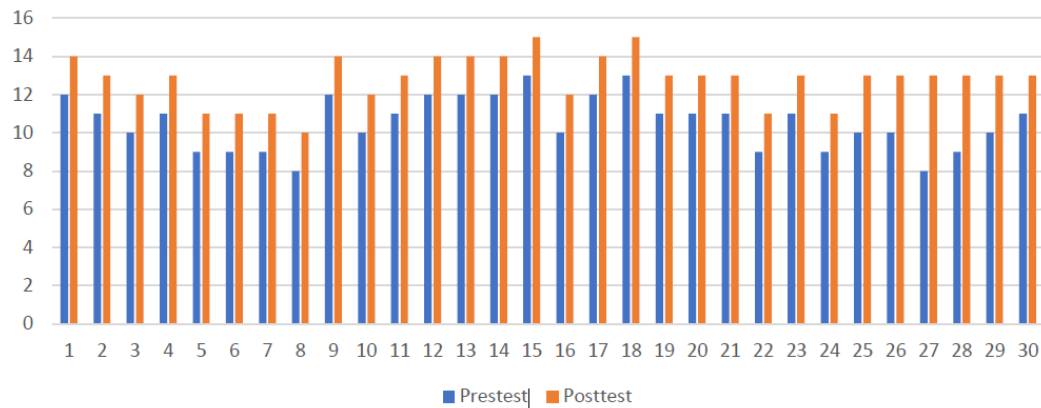
Figure 1. Experimental Class Learning Outcomes

Table 1. Descriptive Statistics of Pretest and Posttest Scores

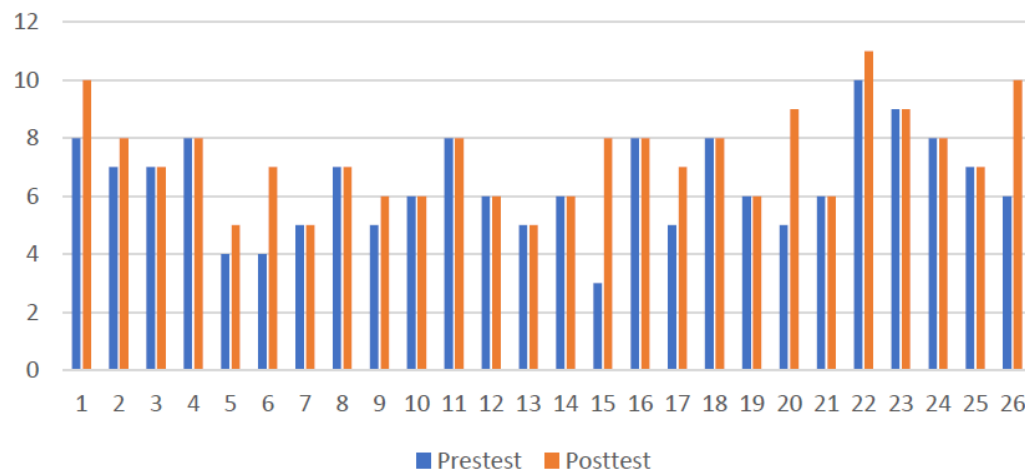|	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Experiment	30	8.00	13.00	10.5333	1.38298
Posttest Experiment	30	10.00	15.00	12.8000	1.24291
Valid N (listwise)	30				

Figure 2. Control Class Learning Outcomes

Table 2. Descriptive Statistics of Pretest and Posttest Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Control	26	3.00	10.00	6.4231	1.67745
Posttest Control	26	5.00	11.00	7.3462	1.59856
Valid N (listwise)	26				

Normality Test Results

The normality of the data was examined using the Kolmogorov-Smirnov test. Table 3. shows that the significance values for both the experimental and control groups in pretest and posttest were greater than 0.05, confirming that the data were normally distributed.

<p style="text-align: center;">**Table 3.** Normality Test Results</p>

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pretest Control	.138	26	.200	.965	26	.498
Posttest Control	.149	26	.143	.939	26	.129
Pretest Experimental	.167	26	.060	.937	26	.117
Posttest Experimental	.222	26	.002	.923	26	.054

Homogeneity Test Results

The homogeneity test was carried out using Levene's Test. Table 4. indicates that the significance value of 0.471 was higher than 0.05, confirming that the data variances between groups were homogeneous.

<p style="text-align: center;">**Table 4.** Homogeneity Test Results</p>

		Levene Statistic	df1	df2	Sig.
Nilai Hasil Belajar	Based on Mean	2.405	1	54	.127
	Based on Median	2.509	1	54	.119
	Based on Median and with adjusted df	2.509	1	53.374	.119
	Based on trimmed mean	2.377	1	54	.129

Hypothesis Testing Results

The hypothesis testing was carried out using paired-sample t-tests for both the control and experimental groups, followed by an independent-sample t-test to compare posttest results between groups. As shown in Table 5, the paired-sample t-test for the control group revealed a mean increase from 6.42 at pretest to 7.34 at posttest, with a mean difference of 0.92. The significance value obtained was $p = 0.004 < 0.05$, indicating a significant difference in learning outcomes before and after conventional instruction. Similarly, Table 7 demonstrates that in the experimental group, the mean score improved from 10.53 at pretest to 12.80 at posttest, with a mean difference of 2.27. The paired-sample t-test yielded a significance value of $p = 0.000 < 0.05$, confirming that the STAD learning model significantly improved students' performance.

<p style="text-align: center;">**Table 5.** Paired-Sample t-Test for the Control Group</p>

Group	N	Mean (Pretest)	Mean (Posttest)	Mean Difference	t
Control	26	6.42	7.34	0.92	-3.149

<p style="text-align: center;">**Table 6.** Paired-Sample t-Test for the Experimental Group</p>

Group	N	Mean (Pretest)	Mean (Posttest)	Mean Difference	t
Experimental	30	10.53	12.80	2.27	-17.954

Finally, Table 7 presents the independent-sample t-test comparing posttest scores between the experimental and control groups. The mean posttest score of the experimental group (M = 12.80) was significantly higher than that of the control group (M = 7.34), with a mean difference

of 5.45. The significance value was p = 0.000 < 0.05, thus rejecting the null hypothesis and confirming that the STAD model had a statistically significant effect on students' Indonesian language learning outcomes.

Table 7. Independent-Sample t-Test of Posttest Scores

Group	N	Mean (Pretest)	Std. Deviation	t	df
Control	26	7.34	1.60		
Experimental	30	10.53	1.24	-14.347	54

These results demonstrate that while both groups showed improvement, the experimental group receiving STAD-based instruction experienced significantly greater gains compared to the control group. This confirms the study's hypothesis that the STAD cooperative learning model exerts a positive and significant influence on students' learning outcomes in Indonesian language instruction.

Discussion

The results of this study confirm that the use of the STAD cooperative learning model significantly improved students' learning outcomes in Indonesian language subjects compared to conventional teaching methods. The experimental group not only demonstrated higher posttest scores but also achieved a moderate N-Gain effectiveness level, showing the strength of STAD in promoting active engagement and collaborative learning. These findings align with previous research that emphasized the effectiveness of cooperative learning strategies in enhancing academic performance and motivation (Siller & Ahmad, 2024; Zhou & Colomer, 2024). Similar studies in the Indonesian context also demonstrated that STAD fosters peer support and accountability, which translates into improved learning outcomes (Amzat et al., 2022).

The comparison with prior research further strengthens the claim that cooperative learning shifts the classroom dynamic from teacher-centered to student-centered, encouraging deeper comprehension. For instance, Siller and Ahmad (2024) and Zhou and Colomer (2024) found that cooperative learning increases not only achievement but also critical thinking and social skills. In addition, Odutayo and Fonseca (2024) reported that STAD implementation in Indonesian junior high schools improved students' engagement and test performance, consistent with the findings of this study.

The novelty of this research lies in its application of the STAD model specifically within Indonesian language learning at the junior secondary level, a subject area that has received less empirical attention compared to mathematics or science. This highlights the broader potential of STAD beyond content mastery in STEM, extending its benefits to literacy and language subjects. The implications of these findings suggest that teachers should adopt STAD as an alternative to conventional teaching, as it not only improves test scores but also develops collaboration, accountability, and communication skills critical for 21st-century learning. For policymakers, the integration of cooperative learning models like STAD into curriculum frameworks can enhance both cognitive and social aspects of student development.

Nevertheless, this study is not without limitations. The sample size was relatively small and restricted to one school, which may limit the generalizability of the results. The study also

relied on quantitative outcomes without exploring qualitative aspects of student attitudes or classroom interactions that could provide richer insights. Future research should therefore expand the sample scope, apply mixed-method approaches, and examine the long-term impact of STAD on students' learning trajectories across various subjects and grade levels.

Conclusion

This study provides empirical evidence that the application of the Student Teams Achievement Division (STAD) cooperative learning model significantly improves students' learning outcomes in Indonesian language instruction at the junior secondary level. The findings showed that the experimental group, which was taught using STAD, achieved a higher posttest mean score (M = 12.80) compared to the control group (M = 7.34), and the results of the independent-sample t-test indicated a significance value of 0.000 ($p < 0.05$), confirming that STAD had a positive and statistically significant impact on student achievement. These results demonstrate that cooperative learning strategies, particularly STAD, can enhance student engagement, encourage peer collaboration, and strengthen mastery of subject matter compared to conventional teacher-centered approaches. The novelty of this research lies in its focus on applying STAD within Indonesian language learning in a junior secondary school setting, which remains underexplored in prior literature, thereby contributing to both cooperative learning scholarship and practical classroom innovation. The implications of this study suggest that educators and policymakers should integrate cooperative learning models such as STAD into curricula to improve not only academic performance but also social and collaborative skills essential for 21st-century education. Nevertheless, the study is limited by its relatively small sample size and focus on a single subject area, indicating the need for further research across different subjects, larger populations, and diverse educational contexts to validate and extend these findings.

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