



The Implementation of the Student Teams Achievement Division (STAD) Cooperative Learning Model Assisted by Educaplay Interactive Media to Improve Pancasila Education Learning Outcomes among Fifth-Grade Students at SD Negeri 32 Lubuklinggau

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Abstract: This study aimed to determine whether the learning outcomes of fifth-grade students at SD Negeri 32 Lubuklinggau in Pancasila Education achieved significant mastery after the implementation of the Student Teams Achievement Division (STAD) cooperative learning model assisted by Educaplay interactive media. This study employed a quantitative method with a pre-experimental design, specifically a one-group pretest-posttest design. The sample consisted of 20 fifth-grade students at SD Negeri 32 Lubuklinggau. The research instrument consisted of 16 multiple-choice questions that met the required criteria based on validity, reliability, discrimination index, and difficulty level analyses. The pre-test results showed an average score of 67.70, with 6 students (30%) achieving the mastery criterion. After two learning sessions using the STAD cooperative learning model assisted by Educaplay interactive media, the post-test results showed an average score of 83.85, with 17 students (85%) achieving the mastery criterion. The hypothesis test resulted in $t_{calculated} = 3.13$ and $t_{table} = 1.729$ at a significance level of $\alpha = 0.05$. Since $t_{calculated} > t_{table}$, H_0 was rejected and H_a was accepted. Therefore, it can be concluded that the learning outcomes of fifth-grade students at SD Negeri 32 Lubuklinggau in Pancasila Education achieved significant mastery after the implementation of the STAD cooperative learning model assisted by Educaplay interactive media.

Keywords: Learning Outcomes, Pancasila Education, STAD, Educaplay.

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Introduction

Education is an important process in developing students' potential, knowledge, character, and skills. The learning process involves interaction between teachers and students to achieve predetermined learning objectives. Therefore, learning activities need

to be designed to encourage students to participate actively, interact with their peers, and construct their understanding of the learning material. In elementary education, the learning process is particularly important because students are developing

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fundamental knowledge, attitudes, and social skills that support their subsequent education.

One of the subjects that contributes to the development of students' character and understanding of national values is Pancasila Education. Through Pancasila Education, students are expected not only to understand concepts related to Pancasila values but also to apply these values in their daily lives. The achievement of these learning objectives is closely related to the learning process implemented in the classroom. Learning activities that are dominated by teacher explanations may provide limited opportunities for students to actively participate, discuss, exchange ideas, and develop their understanding. Therefore, teachers need to select learning models that encourage active participation and are appropriate to students' characteristics.

One learning model that can support active and collaborative learning is the Student Teams Achievement Division (STAD) cooperative learning model. STAD organizes students into heterogeneous groups in which students work together to understand learning materials, discuss problems, and assist one another in achieving learning objectives. The interaction among group members provides opportunities for students to exchange knowledge and participate actively in the learning process. Sihombing et al. (2021) reported that the implementation of STAD in elementary schools emphasizes student activity and interaction, including motivating and helping one another to master the learning material. Similarly, Fauziah and Purnomo (2023) found that the STAD learning model was effective in improving the learning outcomes of fifth-grade elementary school students, as indicated by a significant difference between pre-test and post-test results.

The effectiveness of STAD in improving learning outcomes is also supported by other studies conducted in elementary education. Sianturi et al. (2024) examined the effect of STAD on elementary school students' Social Studies learning outcomes and reported that the application of STAD was associated with improved learning outcomes. Kasuma (2023) also reported that STAD could be used as an effort to improve elementary students' learning outcomes because the model facilitates knowledge sharing through group discussions. In addition, Astuti and Fidrayani (2024), through a literature review concerning STAD in elementary Civic Education, reported that STAD can facilitate students' learning and support the development of critical thinking and communication skills. These findings provide empirical support for the use of STAD as a cooperative learning model that can encourage student participation and improve learning outcomes.

In addition to the selection of an appropriate learning model, the use of interactive learning media can provide additional support for the learning process. Learning media can help teachers present material in a more attractive and interactive manner and provide students with learning experiences that are more varied. One digital learning medium that can be used in elementary education is Educaplay. Educaplay provides interactive activities that can be integrated into learning and can encourage students to engage with learning materials through game-based activities.

The use of Educaplay has also been supported by recent empirical studies in Pancasila Education. Fernanda et al. (2024) examined the use of Educaplay to improve Pancasila Education learning outcomes among elementary school students and reported an improvement in students' learning outcomes after the implementation of the media. Furthermore, Rumaiya and Ali (2025) found that Educaplay had a significant effect on Pancasila Education learning outcomes among elementary school students. Their study also emphasized the potential of Educaplay to make learning activities more engaging and to support students in achieving better learning outcomes. Another recent study by Nisa et al. (2025) examined the effectiveness of Problem Based Learning assisted by Educaplay in Pancasila Education and reported that the integration of an active learning model with Educaplay was relevant to improving elementary students' learning outcomes.

The findings of these previous studies indicate that both STAD and Educaplay have potential to support students' learning outcomes. However, most previous studies have examined STAD or Educaplay separately. STAD emphasizes collaborative learning through heterogeneous groups, while Educaplay provides interactive digital learning activities. Therefore, combining the STAD cooperative learning model with Educaplay interactive media may provide complementary learning experiences by integrating student collaboration with interactive digital activities.

Based on the learning conditions and findings from previous studies, the implementation of STAD assisted by Educaplay is expected to provide students with greater opportunities to participate actively, collaborate with peers, discuss learning materials, and engage in interactive learning activities. The combination of the cooperative learning model and digital interactive media is therefore considered relevant to the characteristics of elementary school students and the objectives of Pancasila Education. Nevertheless, empirical studies specifically examining the implementation of STAD assisted by Educaplay in Pancasila Education among fifth-grade students remain limited.

Therefore, this study was conducted to determine whether the implementation of the Student Teams Achievement Division (STAD) cooperative learning model assisted by Educaplay interactive media can improve the learning outcomes of fifth-grade students in Pancasila Education at SD Negeri 32 Lubuklinggau. This study is expected to provide empirical evidence concerning the use of a cooperative learning model integrated with interactive digital media in elementary Pancasila Education

Method

Research Design

This study employed a quantitative approach using a quasi-experimental method. The experimental design used was a one-group pretest-posttest design. The students were given a pretest before the treatment and a posttest after the treatment using the STAD cooperative learning model assisted by Educaplay interactive media. The research design is presented in Table 1.

Table 1. One-Group Pretest-Posttest Design

Pretest	Treatment	Posttest
O ₁	X	O ₂

Source: Jakni (2016:70)

O₁ represents the pretest administered before treatment, O₂ represents the posttest administered after treatment, and X represents the treatment using Educaplay interactive media.

Research Setting and Participants

The study was conducted at SD Negeri 32 Lubuklinggau, located on Jl. Wirakarya, Cereme Taba, Lubuklinggau Timur II District, Lubuklinggau City, South Sumatra. The research was conducted during the second semester of the 2025/2026 academic year.

The population consisted of all fifth-grade students of classes V.A and V.B, totaling 44 students. Class V.A consisted of 24 students, while class V.B consisted of 20 students. The sample consisted of all 20 students of class V.B, comprising 10 male and 10 female students. The sample was selected using random sampling.

Table 2. Population of the Study

Class	Male	Female	Total
V.A	10	14	24
V.B	10	10	20
Total	20	24	44

Source: SD Negeri 32 Lubuklinggau, Academic Year 2025/2026.

Data Collection

Data were collected through observation, interviews, documentation, and tests. Observation was conducted in the fifth-grade classroom to observe teacher activities, student participation, the use of learning media, and classroom interaction. Interviews were conducted with the principal, fifth-grade teacher, and students to obtain information concerning the learning process, learning difficulties, and students' responses. Documentation consisted of photographs of interviews, teacher observations, and classroom observations.

The test was used to measure students' cognitive learning outcomes in Pancasila Education. The initial test instrument consisted of 20 multiple-choice items. After the instrument testing process, 16 items were found to be valid and were used as the research instrument.

Instrument Testing

The instrument was tested for validity, reliability, discrimination power, and item difficulty. The validity test showed that 16 of the 20 items were valid, with an *r*table value of 0.423, while four items were invalid and were excluded from data collection.

Reliability was examined using the Kuder-Richardson 20 (KR-20) formula. The 16 valid items obtained a reliability coefficient of 0.85, which was classified as very high reliability in the thesis.

The discrimination analysis resulted in 11 items classified as good, six as adequate, and three as poor. Meanwhile, the difficulty analysis showed that 19 items were classified as easy and one item as moderate.

For the journal article, the most important instrument table is the overall instrument-testing recap rather than reproducing every individual criterion table.

Table 3. Summary of Instrument Testing

Instrument Test	Result
Validity	16 valid items; 4 invalid items
Reliability (KR-20)	0.85 (very high)
Discrimination power	11 good; 6 adequate; 3 poor
Item difficulty	19 easy; 1 moderate
Final instrument	16 valid items

Source: Primary data of the researcher.

Data Analysis

The data analysis involved calculating the mean and standard deviation of the pretest and posttest scores. Normality was examined using the chi-square goodness-of-fit test. Data were considered normally distributed when the calculated chi-square value was less than or equal to the table value.

Hypothesis testing was conducted using the *t*-test. The null hypothesis stated that the average Pancasila Education learning outcome after the

implementation of STAD assisted by Educaplay was less than 70, whereas the alternative hypothesis stated that the average learning outcome was greater than or equal to 70. The test was conducted at a significance level of $\alpha = 0.05$ with degrees of freedom of $n - 1$. The alternative hypothesis was accepted when $t_{\text{count}} > t_{\text{table}}$.

The study also examined the percentage of students achieving mastery. According to the criterion stated in the thesis, classical mastery was achieved when the minimum percentage of students reaching mastery was $\geq 85\%$.

Tables Prioritized for the International Journal. For the Methods section, I recommend retaining three tables from the thesis:

1. One-Group Pretest-Posttest Design – important because it explains the research design.
2. Population Table – important because it shows the population and sample selection.
3. Instrument Testing Summary – important because it demonstrates that the 16-item instrument used in the study had passed the required testing

Result and Discussion

Learning Outcomes Before and After the Implementation of STAD Assisted by Educaplay

The research was conducted in fifth-grade students at SD Negeri 32 Lubuklinggau. The study involved 20 students and employed a quantitative approach with a pre-experimental design using a one-group pretest-posttest design. The research instrument consisted of 16 valid multiple-choice questions. Before the treatment, students were given a pre-test to determine their initial learning outcomes. Subsequently, the students participated in two learning sessions using the Student Teams Achievement Division (STAD) cooperative learning model assisted by Educaplay interactive media. After the treatment, a post-test was administered to determine the students' learning outcomes.

The pre-test results are presented in Table 1.

Table 4. Pre-test Learning Outcomes

Mastery Category	Frequency	Percentage
Mastery (≥ 70)	6	30%
Not Mastery (< 70)	14	70%
Total	20	100%

Source: Primary Research Data.

As shown in Table 1, only 6 of the 20 students (30%) achieved the mastery criterion, while 14 students (70%) had not achieved mastery. The mean pre-test score was 67.70, with a standard deviation of 11.09. These results indicate that the students' initial learning

outcomes were still below the established mastery criterion.

After the pre-test, the students received treatment for two learning sessions using the STAD cooperative learning model assisted by Educaplay interactive media. The learning activities organized students into heterogeneous groups, encouraged discussion and peer assistance, and maintained individual responsibility for learning outcomes. Educaplay was used to provide more interactive learning activities and increase student involvement during the learning process.

The descriptive statistics were used to describe the students' learning outcomes based on the mean and standard deviation of the pre-test and post-test scores. A similar approach was applied by Candradewi et al. (2020), who used descriptive statistical analysis to describe elementary school students' learning outcomes through the Student Teams Achievement Division (STAD) learning model.

After the treatment, the students completed the post-test. The results are presented in Table 2.

Table 5. Post-test Learning Outcomes

Mastery Category	Frequency	Percentage
Mastery (≥ 70)	17	85%
Not Mastery (< 70)	3	15%
Total	20	100%

Source: Primary Research Data.

Table 2 shows that 17 students (85%) achieved the mastery criterion, while 3 students (15%) had not yet achieved mastery. The mean post-test score was 83.85, with a standard deviation of 9.24. Compared with the pre-test mean of 67.70, the mean score increased by 16.15 points. The percentage of students achieving mastery also increased from 30% to 85%, representing an increase of 55 percentage points.

These results indicate a positive change in students' learning outcomes after the implementation of the STAD cooperative learning model assisted by Educaplay. The improvement was reflected not only in the increase in the mean score but also in the substantially higher percentage of students achieving the mastery criterion.

Normality Test

A normality test was conducted to determine whether the pre-test and post-test data were normally distributed. In the original study, the Chi-Square test was used with a significance level of 0.05. The results are presented in Table 3.

Table 3. Normality Test Results

Test	χ^2 count	χ^2 table	Conclusion
Pre-test	1.0544	9.488	Normal
Post-test	5.4511	9.488	Normal

Source: Primary Research Data.

Based on Table 3, the calculated Chi-Square values for both the pre-test and post-test were lower than the Chi-Square table value of 9.488. The pre-test obtained χ^2 count = 1.0544, while the post-test obtained χ^2 count = 5.4511. Therefore, both datasets were categorized as normally distributed. The results indicate that the data fulfilled the normality requirement for the subsequent parametric hypothesis testing.

The normality test was conducted to determine whether the students' learning outcome data were normally distributed before the hypothesis test was performed. This procedure is consistent with Candradewi et al. (2020), who conducted a normality test as a prerequisite analysis before testing the research hypothesis in an elementary school learning study.

Hypothesis Test

Following the normality test, hypothesis testing was conducted to determine whether the learning outcomes of the students after the implementation of STAD assisted by Educaplay had achieved the predetermined mastery criterion of 70.

The statistical hypothesis was formulated as follows:

$H_0: \mu < 70$

$H_a: \mu \geq 70$

The hypothesis test used the post-test mean as the basis for comparison with the mastery criterion. The results are presented in Table 4.

Table 4. Hypothesis Test Results

Statistical Component	Result
N	20
Mean	83.85
Standard Deviation	9.24
Test Value	70
df	19
tcount	6.69
ttable	1.729
α	0.05
Decision	H_0 rejected, H_a accepted

Source: Primary Research Data.

The hypothesis was tested using a one-sample t-test by comparing the students' post-test mean score with the predetermined mastery criterion of 70. The use of a one-sample t-test is consistent with Syawaluddin et al. (2020), who used this test to examine the mastery of

elementary school students' learning outcomes against a predetermined criterion.

The calculation resulted in tcount = 6.69 with df = 19. At $\alpha = 0.05$, the ttable value was 1.729. Because tcount (6.69) > ttable (1.729), H_0 was rejected and H_a was accepted. Therefore, the learning outcomes of fifth-grade students in Pancasila Education after the implementation of the STAD cooperative learning model assisted by Educaplay were significantly at or above the mastery criterion of 70.

The hypothesis test strengthens the descriptive findings. The post-test mean of 83.85 exceeded the mastery criterion of 70, while 85% of students achieved mastery. Thus, the implementation of STAD assisted by Educaplay resulted in learning outcomes that met the predetermined mastery criterion. The research findings are consistent with previous studies showing that STAD can improve elementary students' learning outcomes through group interaction, cooperation, and active participation. Research on Educaplay in Pancasila Education has also reported improvements in students' learning outcomes and engagement after the use of interactive Educaplay media.

Conclusion

Based on the results of the study, the implementation of the cooperative learning model Student Teams Achievement Division (STAD) assisted by Educaplay interactive media improved the learning outcomes of fifth-grade students in Pancasila Education at SD Negeri 32 Lubuklinggau. This improvement was reflected in the increase in the mean score from 67.70 in the pre-test to 83.85 in the post-test. The percentage of students achieving learning mastery also increased from 30% to 75%. The hypothesis testing resulted in a tcount of 3.13. Based on the testing criterion used in the study, tcount > ttable, so H_0 was rejected and H_a was accepted. Therefore, the study concluded that the average learning outcomes of fifth-grade students in Pancasila Education after the implementation of the STAD cooperative learning model assisted by Educaplay reached the expected mastery criterion. The implementation of STAD assisted by Educaplay also provided students with opportunities to work collaboratively, exchange ideas, participate actively, and engage with learning materials through interactive activities. Thus, the combination of the cooperative learning model and interactive media supported the learning process and students' learning outcomes in Pancasila Education.

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