Piwulang volume 13 (2) (2025)

Piwulang: Jurnal Pendidikan Bahasa Jawa

https://journal.unnes.ac.id/journals/piwulang

EFFECT OF THE COOPERATIVE LEARNING MODEL TYPE STAD FOR *NYURAT LONTAR* SKILL OF STUDENTS

I Gede Rivandi Prasetya[1], Made Reland Udayana Tangkas[2], Komang Puteri Yadnya Diari[3]
[1,2,3]Education in Balinese Language and Religious Literature, Faculty of Dharma Acarya, Mpu Kuturan State Hindu Institute, Indonesia
Corresponding Author: rivandi909@gmail.com

DOI: 10.15294/piwulang.v13i2.33209
Accepted: September 1th 2025 Approved: October 13th 2025 Published: November 30th 2025

Absract

The primary goal of education is to develop the skills of each student. These skills will be invaluable in the future. One skill essential for preserving Balinese culture is writing on palm leaves, also known as *nyurat lontar*. *Nyurat lontar* is practiced in schools. Encouraging this requires various aspects, one of which is the learning model. This study was conducted to determine the effect of the Cooperative Learning model type STAD on the writing skills of class X students in SMA Negeri 1 Pupuan. This study selected a population of class X, comprising a total of 267 students, and took a sample of class X6 as the control class and class X8 as the experimental class. This study employs a quantitative research approach with a quasi-experimental design, specifically a nonequivalent control group design. The selected experimental class group will receive treatment, while the control class will not. The final value will be compared to determine whether the treatment given by the researcher has an effect on the Cooperative Learning model type STAD's impact on the skills of Nyurat Lontar in that class. Based on the posttest results, it is known that the hypothesis test of the Independent Samples Test of Lontar Writing skills obtained a significance (2-tailed) of 0.000. The basis of decision-making is that if p-value (2-tailed) < 0.05, then Ha is accepted and H0 is rejected. This indicates that Ha is accepted, which suggests that the Cooperative Learning model type STAD has an impact on the long-term writing skills of class X students at SMA Negeri 1 Pupuan. With the STAD type of cooperative learning model, the practical activity of *nyurat lontar* becomes easier to implement, and this activity can be useful for preserving culture so that it does not disappear alongside the development of the times.

Keywords: cooperative learning; STAD; Nyurat Lontar; writing skill

 P-ISSN 2252-6307 E-ISSN 2714-867X

INTRODUCTION

Every country has progress based on an adequate education system. Education is a means for a country to advance by providing proper and adequate education to all its citizens; through education, all mankind can hone and develop their potential through a learning process. The need for proper education is very important in producing quality human resources (Hamdi, 2016). In Indonesia, the education system has been regulated in the 1945 Constitution. For example, Article 31, paragraph 1 states that education in Indonesia must be accessible to every citizen. This is also in line with Law No. 12, Article 1, which states that education can shape the potential of students and improve their religious and spiritual attitudes, intelligence, skills, and other qualities through a planned learning process. Education is a primary factor in advancing a nation. Education plays a crucial role in shaping the character, knowledge, and expertise of each generation, enabling it to produce generations of experts in all fields (Kholiq et al., 2024). Education in Indonesia

must be taken for at least 12 years by every citizen (Siswanto, 2020).

The state or dynamics of education, learning strategies are the focal point to optimize students' skills. To develop a learning process that enables educators to implement a learning model tailored to the field situation when teaching (Insani & Kholiq, 2025). The independent curriculum also emphasizes that the student learning process is the main focal point in learning activities because it must adjust to the approach of students' talents and interests (Utari & Muadin, 2023). The education system of each school in Bali varies in its organization. Some schools employ different learning models tailored to the school's circumstances and needs. The school researched by the researcher was at SMA Negeri 1 Pupuan.

SMA Negeri 1 Pupuan is located in Pujungan village, Pupuan District, Tabanan Regency. In this school, teachers, when implementing the learning process using the model, will adjust to the field conditions and classroom conditions. This is in line with Kholiq et al., (2024), Sukoyo et al., (2023), and Febriani & Insani (2024) research which also revealed the need for a variety of learning models that are adapted to the needs and characteristics of students. Teachers employ various learning models, one of which is problem-based learning, where emphasis is placed on solving a problem during the learning process. Additionally, project-based learning emphasizes the final result or product of learning, and group work is also utilized. Group-based learning, or often referred to as the cooperative learning model, refers to collaboration and the process of relationships between students that creates a sense of cooperation between students in learning (Sappaile et al., 2023).

One of the relevant cooperative learning models used at SMA Negeri 1 Pupuan is the cooperative learning model according Febriani & Insani in (Wulan et al., 2025). It is a learning model based on group work that facilitates easier learning for students. One part of the cooperative learning model is the cooperative learning model type Student Teams Achivement Division or abbreviated as a cooperative learning model STAD. The cooperative learning model STAD is a learning model based on group cooperation when doing one thing, where members in each group will be selected using varying abilities, and members in each group are obliged to cooperate in doing the assigned tasks (Suparmini, 2021). Use of learning models STAD Type Cooperative. In this school, it is applied to classes where students find it difficult to learn, with a focus on the teacher or the Teacher Center.

Balinese language learning at SMA Negeri 1 Pupuan is conducted using various learning methods that are tailored to the material being taught. Balinese language learning is conducted for two hours, or 2 x 45 minutes, in each class. Of course, this time is still not enough for students to digest the material from Balinese language subjects, one of which is the Balinese Script material. Students at SMA Negeri 1 Pupuan, most of them are still not fluent in writing or reading Balinese script. This is a challenge for teachers in teaching the Balinese script, which should be at the high school level. For Balinese script material, students must be able to write Balinese script in various media, such as *nyurat lontar*. *Nyurat lontar* is a traditional writing system of the Balinese people, where the Balinese script is

inscribed on the lontar as the writing medium. *Nyurat lontar* is a valuable and rich cultural artifact in Balinese culture. It is used in a variety of contexts, from religion and art to everyday life. Preserving and promoting the use of *Nyurat lontar* is an important step in preserving Balinese cultural and linguistic heritage, ensuring it is not eroded in the modern era, as it is today.

This study focuses on the application of the Cooperative Learning model type STAD and its effect on students' throwing skills in class X of SMA Negeri 1 Pupuan. Grade 10 students at SMA Negeri 1 Pupuan are more comfortable studying with their peers than with their teachers. After conducting previous interviews with several Class X students at SMA Negeri 1 Pupuan, they argued that the fun way of learning and the learning style are more enjoyable when learning Balinese is done in a group setting. This is in line with the findings of Rahmawati et al., (2024) and Dewi & Insani (2024) who also stated that students at the high school level and equivalent prefer to study in groups because it is considered fun. Following up on these problems, the Cooperative Learning model type STAD is key for students to hone their knowledge. The application of this learning model is expected to enable students to engage in learning activities and become more adept at absorbing the material presented by the teacher.

There is a general paradigm regarding the learning model STAD Type Cooperative, for example, discussed in a study by (Suriyanto et al., 2020) Explaining the cooperative learning model, CITY Students are able to improve the learning outcomes of acid-base material. Next research by (Wedawati, 2023) In this study, the cooperative learning model is also applied to CITY in Balinese language learning, namely in improving reading skills *Gancarna*, with the application of the cooperative learning model. Students' ability to read effectively can be improved. Furthermore, it is also explained in the International Journal, namely, research from (Ghufron, 2023) Research, The Effect of STAD-Type Cooperative Learning Based on a Learning Tool on Critical Thinking Ability in Writing Materials, explains that the Electronic Learning Method, based on STAD-Type Cooperative Learning, has a significant effect on students' psychomotor and affective learning outcomes, and students' critical thinking skills have no effect on student learning outcomes. The next research aims to test the practicality and effectiveness of the Electronic Learning Method based on the STAD Type Cooperative, and to determine the impact of academic skills on students' achievement and thinking ability.

It is essential to note that the application of the Cooperative Learning type STAD model has been widely used in previous studies; however, the application of the STAD Type Cooperative Learning model in the lontar nyurat skill material is still a relatively new area and has not been fully explored. The novelty of the research lies in the application of the Cooperative Learning model type STAD in a unique context, specifically the skill of *Nyurat Lontar* at the high school level. *Nyurat lontar*, as the focus of learning materials, provides added value because it not only focuses on the language aspect but also enriches the local cultural heritage.

The Cooperative Learning model type STAD has been the focus of previous research; its application in the context of Nyurat Lontar at the high school level is still limited. There is a knowledge gap in understanding the extent to which cooperative learning models can be adapted

and have a positive impact on students' skills, especially in the context of the lontar writing material. The application of varied learning models also has an impact on the different experiences students have when participating in a learning process, especially in Balinese language subjects and nyurat lontar materials.

Identifying this gap, this study aims to provide a new approach to improving the learning system at SMA Negeri 1 Pupuan and contribute to the educational literature, particularly in the development of relevant and effective learning strategies that support the understanding and application of nyurat lontar for students in class X of SMA Negeri 1 Pupuan. After a preliminary study in the form of an observation in class X of SMA N 1 Pupuan, problems were identified regarding skills in writing Balinese script, especially in the practice of *nyurat lontar*. Some students are not fluent in writing Balinese script, while others are already fluent in writing it, especially in the context of the lontar media. By applying the Cooperative Learning model type STAD to the lontar nyurat material, students can hone their skills related to *nyurat lontar*.

Some of the factors that can affect this are the lack of intention among students to learn to write Balinese script and the shortage of teachers who are truly graduates in Balinese language education. Additionally, the lack of tools and materials to support the learning of the Balinese script, specifically nyurat lontar, presents an obstacle for students to learn the Balinese script in nyurat lontar. Based on the explanations provided, the researcher conducted an experiment by applying the STAD type cooperative learning model to the learning of class X students at SMA Negeri 1 Pupuan to determine how the model affects the *nyurat lontar* skills of students at SMA Negeri 1 Pupuan. The implementation of the Cooperative Learning model type STAD aims to enable the researcher to effectively digest the Balinese script writing material and produce a final result in the form of a nyurat lontar, which can be useful in honing their writing skills and be beneficial in the future.

METHODS

This study employs a type of quantitative research with an experimental approach, specifically a Quasi-Experimental Design (Nonequivalent Control Group Design). Each class will be given a pretest and a posttest, where the control class will not receive treatment and the experimental class will receive treatment after completing the pretest. This study selected the population of class X at SMA Negeri 1 Pupuan, using a sample of class X6 as the control class with 30 students and Class X8 as the experimental class with 30 students. Sampling was conducted using the purposive sampling technique, where specific considerations were taken into account. Specifically, class X6 achieved the highest average odd semester score, while class X8 obtained the lowest average odd semester score in one batch of class X at SMA Negeri 1 Pupuan.

The instrument used by the researcher to collect data was in the form of an assessment form of a practical test instrument for the skill of *nyurat lontar*. The data collection carried out by the researcher was in the form of a practical test instrument consisting of a pretest and posttest of lontar writing skills. This study employs bivariate correlations for validity tests and reliability analysis using the SPSS application version 27 for Windows to determine the influence of the

Cooperative Learning model type STAD on throwing skills. Furthermore, the data analysis technique employs both descriptive and inferential statistical analysis, including normality tests, homogeneity tests, and hypothesis tests.

RESULTS AND DISCUSSION

The use of cooperative learning models, such as STAD, in learning the Balinese language, particularly Balinese script writing material, at SMA Negeri 1 Pupuan, is a new approach. The use of this learning model provides students with the freedom to digest and solve problems in the material Nyurat Lontar, which can be done in a group setting with friends. This learning is based on cognitive and sociocultural learning theories. Cognitive learning theory is more concerned with the learning process through the process of interaction between environments, rather than the learning outcomes, and sociocultural learning also emphasizes the process of social interaction and the environment (Witasari, 2023). This shows that learning STAD Type Cooperative in the material *Nyurat lontar* is emphasized in the process, especially in terms of social and culture, where in the process students must master the techniques in *Nyurat lontar* which is obtained through social interaction both with teachers and with their group mates, although later the results will still not be optimal, but if they continue to be trained during the learning process, in the future students will be more proficient in practice *Nyurat lontar*.

In the process of writing lontar manuscripts, several criteria serve as the assessment rubric in this study. As follows.

First, the accuracy of using the Balinese script. In this case, students, as a result of Nyurat Lontar, are judged by the accuracy of the use of the Balinese script that has been made. Students who can accurately copy Latin script into Balinese script using the correct pairing of characters with 100% accuracy receive a score of 5 in the excellent category. Students are able to accurately use pairs of characters in transcribing Latin script to Balinese script in the lontar with an accuracy percentage of 75%, earning a score of 4 in the good category. Students are quite capable of using pairs of characters in copying Latin script to Balinese script into the lontar. With an accuracy percentage of 50%, it receives a score of 3, categorized as moderate. Underprivileged students are able to accurately use pairs of characters in copying Latin script to Balinese script in the lontar, achieving a 25% accuracy percentage, which corresponds to a score of 2 in the low category. Students are unable to correctly use pairs of characters when copying Latin script to Balinese script in the lontar, with an accuracy percentage of 0%, resulting in a score of 1 and a placement in the underperform category.

Second, the shape of the writing. In this case, the form of Balinese script writing is written according to the standard form of *nyurat lontar*. The form of writing is illustrated in the following image.

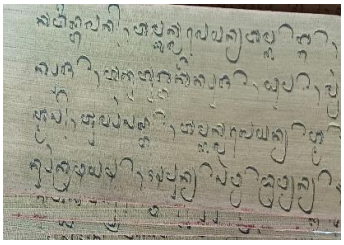

Figure 1. An example of a Shape of the writing *lontar*.

Students who are capable of writing poetry according to the standard form of poetry, with a

percentage of 100% similarity, receive a score of 5, categorized as excellent. Students were able to write lontar according to the standard form of *nyurat lontar,* with a percentage of similarity of 75% getting a score of 4 in the good category. Students are quite capable of producing nyurat lontar according to the standard form of nyurat lontar, with a percentage of similarity of 50%, earning a score of 3 in the moderate category. Students who are low-able to make a mark according to the standard form, with a score of 25%, receive a score of 2 in the low category. Students are unable to recite the melody according to the standard form of the melody, with a percentage of similarity of 0%, resulting in a score of 1 and a placement in the underperform category.

Third, hand gesture. In this case, when students practice throwing, the gesture of their hands is very much considered. An example of a hand posture is illustrated in the following image.

Figure 2. An example of a hand-held gesture

Students who are capable of writing effectively by using correct writing techniques/hand gestures, with 100% accuracy, receive a score of 5, categorized as excellent. Students are able to write lontar using the correct writing hand technique/gesture, with an accuracy percentage of 75% getting a score of 4 in the good category. Students are quite capable of writing lontar by using the correct writing technique/hand gesture, with a percentage of accuracy of 50%, which earns a score of 3 in the moderate category. Students who are low in their ability to write lontar by using the correct writing technique/hand gesture, with an accuracy percentage of 25%, receive a score of 2 in the poor category. Students who are unable to write a lontar using the correct writing hand technique with a percentage of accuracy of 0% receive a score of 1 with an underperform category.

Fourth, the neatness of writing. In this case, the neatness of writing is also a reference in the assessment of Nyurat Lontar; the neatness of writing makes it easier for others to read. For students who are very capable of writing lontar with 100% consistency, achieve a score of 5 in the excellent category. Students who are able to write lontar with a consistency level of 75% get a score of 4 in the good category. Students who consistently score at a 50% level receive a score of 3, categorized as moderate. Students who are low in their ability to write lontar with a consistency level of 25% receive a score of 2 in the low category. Students who are unable to write lontar with a consistency level of 0% receive a score of 1, categorized as underperforming.

Fifth, completeness of writing. In the practice of *Nyurat Lontar,* completeness of writing is the last aspect of assessment. For students who are very capable of completing the practice of shurat lontar with 100% completeness, they receive a score of 5 in the excellent category. Students were able to complete the practice of Nyurat Lontar with a completion rate of 75%, achieving a score of 4 in the good category. Students are quite able to complete the practice of

Nyurat Lontar with a completion level of 50% to achieve a score of 3 in the moderate category. Students who are low-able to complete the practice of nyurat lontar with a completeness rate of 25% receive a score of 2 in the low category. Students who are unable to complete the practice of surat lontar with a completeness rate of 0% receive a score of 1, categorized as underperforming.

The final score is obtained in the following way.

$$\text{Final value} = \frac{\text{Score obtained}}{\text{maximum score (25)}} \text{ x } 100\%$$

Table 1. Assessment interval categories *Nyurat lontar*

Category	Intervals
Excellent	81-100
Good	61-80
Moderate	41-60
Low	21-40
Under Perform	0-20

Source of Riduwan in (Inayati et al., 2024)

Implementation of the Cooperative learning model type STAD on the throwing skills of grade X students of SMA Negeri 1 Pupuan

Based on the results of learning activities carried out in class X6 and class X8 of SMA Negeri 1 Pupuan on the material of *nyurat lontar* by applying the Cooperative learning model type STAD in the experimental class and applying a different learning model in the control class. Pretests and posttests were administered in both classes, namely the control class and the experimental class. The provision of pretests in both classes is carried out in order to find out the initial ability of the lontar writing skills of students in each class, then after knowing the initial abilities of the students in each class, the implementation of the Cooperative learning model type STAD will be carried out in the experimental classroom and different learning models or conventional learning models in the control class. After receiving treatment, a posttest was administered in both classes to assess the results in the control and experimental classes.

The pretest activity in the control class began with an opening greeting from the class leader and proceeded directly to a joint prayer, according to their respective beliefs. After that, the learning activity continued with attendance. In this activity, the researcher recorded students who were not present on that day. For students who were not present at the time of learning, an assignment to practice Nyurat Lontar at home was given, and it was handed over next week when the student concerned returned to school. After conducting attendance, the provision of nyurat lontar material followed. The researcher provides the material, explaining first the general overview of the lontar, then its function, and finally the lontar writing technique. After providing further material to carry out the practice of *nyurat lontar*, where before the practice, the researcher will provide tools for *nyurat lontar*, after all students get the tools for *nyurat lontar*, students immediately do the practice of *nyurat lontar* with the text of the questions that have been provided by the researcher with an estimated time of 60 minutes of work. During the work, students will continue to be monitored and provided with explanations for those who ask questions and still do not understand the material. After completing the practice, students collected the results of the palm oil practice from the researcher so that the pretest results could be obtained in the control class. After that, the researcher gave a briefing regarding the

next meeting. The learning session concluded with a joint prayer, according to each other's beliefs, and a closing greeting.

The pretest activity in the experimental class is nearly identical to that in the control class, beginning with an opening greeting by the class leader and proceeding directly to a joint prayer according to their respective beliefs. After that, the learning activity continued with attendance, during which the researcher recorded the names of students who were absent on that day. Students who were not present at the time of learning would be given an assignment to practice nyurat lontar at home and would be handed it over next week when the student concerned returned to school. After conducting the attendance, it was followed by the provision of nyurat lontar material. The researcher provides the material, explaining first the general overview of the lontar, then its function, and finally the lontar writing technique. After providing further material to carry out the practice of *nyurat lontar*, where, before the practice, the researcher will provide tools for *nyurat lontar*, after all students get the tools for *nyurat lontar*, students immediately do the practice of *nyurat lontar* with the text of the questions that have been provided by the researcher, with an estimated time of 60 minutes of work. During the work, students will continue to be monitored and provided with explanations for those who ask questions and still do not understand the material. After completing the practice, students collected the results of the palm oil practice from the researcher so that the pretest results could be obtained in the control class. After that, the researcher gave a briefing regarding the next meeting. The learning session concluded with a joint prayer, according to each other's beliefs, and a closing greeting.

After finding the results of the pretest, the researcher performed a treatment in the experimental class, and the researcher conducted a conventional lesson in the control class, where the researcher explained the material with the lecture method and then instructed the students to immediately practice the palm oil after the material was explained to the control class. Furthermore, in the experimental class, the researcher provided treatment in the form of the STAD cooperative learning model. The researcher first explained the results of the evaluation from the pretest and then formed a group with the aim that students practice *nyurat lontar* with their group mates. After administering the treatment, the researcher immediately administered a posttest in both classes, where the control class and the experimental class were used to determine the effect of the treatment on them.

Posttest activities in the control class were conducted almost identically to the pretest activities, using the conventional learning model. This involved an opening greeting led by the class leader, followed immediately by a joint prayer according to the participants' respective beliefs. After that, the learning activity continued with attendance at this activity, the researcher noted that students who were not present on that day, for students who were not present at the time of learning would be given an assignment to do the practice of *nyurat lontar* at home and handed over next week when the student concerned had returned to school, after attending attendance followed by remembering the material that had been obtained at Previous meeting about the material of *Nyurat lontar*, in this activity the researcher will ask several questions to students about the material that has been given in the

previous meeting, the goal is to find out whether students still remember the material that has been given. After remembering the further material, the researcher provides an evaluation of the previous pretest activity. In this activity, the researcher corrects and provides input to students regarding the results of the previous lontar nyurat practice, so that later, during the posttest activity, the results of the lontar nyurat practice will be maximized. After that, the students practice the lontar nyurat. Again, before the practice, the researcher will provide tools for Nyurat Lontar. After all students have received the tools for Nyurat Lontar, they will immediately practice it with the same question text as last week, with an estimated time of 60 minutes of work. After completing the practice, students collected the results of the palm oil practice from the researcher, allowing for the posttest results to be obtained in the control class. The lowon ended with a joint prayer and closing greeting.

The posttest activity in the experimental class began with an opening greeting led by the class leader, followed immediately by a joint prayer according to the participants' respective beliefs. After that, the learning activities continued with attendance. For students who were not present at the time of learning, an assignment to practice Nyurat Lontar at home was given. It will be handed over next week when the student concerned returns to school. After conducting an attendance check and recalling the material obtained in the previous meeting regarding Nyurat Lontar, the researcher will ask students several questions about the material covered in the previous meeting. The goal is to determine whether students still recall the material that has been covered. After recalling the material, the researcher provides an evaluation of the previous pretest activity. In this activity, the researcher corrects and provides input to students regarding the results of the previous lontar nyurat practice, so that later, during the practice in the posttest activity, the results of the student lontar narrat practice will be maximized. After that, the researcher formed a heterogeneous group to work on the practice of *nyurat lontar* in groups, in an experimental class consisting of 30 students. The group was then divided into 5 groups, each with a total of 6 people. After the group was formed, students practiced nyurat lontar with similar questions to those during the pretest, working for an estimated 60 minutes. When the students practiced nyurat lontar, the researcher provided direction and guidance to students and groups who experienced difficulties with the practice. After completing the practice, students collected the results of the practice of Surat Lontar from the researcher so that the results of the posttest were obtained in the experimental class. After the students complete the practice of nyurat lontar, the teacher provides an evaluation related to the learning that has been carried out. The researcher appreciates students who participate in learning well and are recognized with awards. The lowon ended with a joint prayer and closing greeting.

Table 2. Results of *Nyurat lontar* skills (Pretest) in class x6 (control class).

Category	Intervals	Students	Percentage
Excellent	81-100	0	0%
Good	61-80	16	53%
Moderate	41-60	14	47%
Low	21-40	0	0%
Under Perform	0-20	0	0%
Total		30	100%

After conducting the pretest in the control class and experiment, the following results were obtained; judging from the analysis of the description of the pretest results in the control class, the data obtained from 0 students with Excellent, 16 students with a percentage (53%) of Good, 14 students with a Moderate percentage (47%), 0 students Poor, and 0 students Under perform. The data obtained in this study were collected from the pretest of the Nyurat Lontar practice given in a control class with a total of 30 students. The pretest scores in this control class ranged from 48 to 72.

Table 3. Results of Nyurat Lontar Skills Before Receiving Treatment (Pretest) in the Experimental Class.

Category	Intervals	Students	Percentage
Excellent	81-100	0	0%
Good	61-80	16	53%
Moderate	41-60	11	47%
Low	21-40	3	0%
Under Perform	0-20	0	0%
Total		30	30

Furthermore, the analysis of the pretest description in the experimental class explained that there were 0 students with Excellent, 16 students with a percentage (53%), 11 students with a Moderate percentage (37%), 3 students with a Low percentage (10%), and 0 students with Underperform. The data obtained in this study were collected from the pretest of the Nyurat Lontar practice given in an experimental class with a total of 30 students. The pretest scores in this experimental class ranged from 40 to 76.

The results of the pretest in both the control and experimental classes showed that the students' skills were still in the moderate category, with some students still in the poor category. Besides that, there were also many students who received a good category, but still no students who received an excellent category.

Table 4. Results of posttest *Nyurat Lontar* skills in class X6 (control class).

Category	Intervals	Students	Percentage
Excellent	81-100	0	0%
Good	61-80	24	53%
Moderate	41-60	6	47%
Low	21-40	0	0%
Under Perform	0-20	0	0%
Total		30	30

The results of the posttest for the control class explained that there were 0 students in the Excellent category, 24 students with a percentage (80%) in the Good category, 6 students in the Fair category with a percentage (20%), 0 students in the Low category, and 0 students with a Underperform category. The data obtained in this study is data collected from the posttest of the practice of *Nyurat Lontar* given in a control class with a total of 30 students. The posttest scores in this control class ranged from 52 to 80.

Table 5. Results of *Nyurat lontar* Skills after Receiving Treatment (Posttest) in Experimental Class

Category	Intervals	Students	Percentage
Excellent	81-100	15	0%
Good	61-80	15	53%
Moderate	41-60	0	47%
Low	21-40	0	0%
Under Perform	0-20	0	0%
Total		30	30

For the results of the posttest of the experimental class, there were 15 students in the Excellent category with a percentage (50%), 15 students with a percentage (50%) of the Good category, 0 students in the Adequate category, 0

students in the Low category, and 0 students in the Underperform category. The data obtained in this study were collected from the posttest of the Nyurat Lontar practice given in an experimental class with a total of 30 students. The posttest scores in this experimental class ranged from 76 to 88.

Based on the results of the posttest from each class, it can be seen from the previous discussion that in the control class, the lowest score is 52, and the highest score is 80. Similarly, in the experimental class, the lowest score is 76, and the highest score is 88. Based on this, it can be concluded that there is an increase in the skill of *Nyurat Lontar* between the two classes. However, the improvement in lontar writing skills was more pronounced in the experimental class compared to the control class.

The Effect of the Cooperative learning model type STAD on the Literacy Skills of Class X Students at SMA Negeri 1 Pupuan

Based on the results of the analysis described earlier, the hypothesis test results show that the Nyurat lontar in the experimental class performed better than in the control class. This indicates that the STAD Type Cooperative learning model is more effective than the one used in the control class. Before conducting a hypothesis test, it is necessary to present a description of the data first and then test the assumptions.

Based on the analysis of the skills data description of Nyurat Lontar before receiving treatment in the control and experimental classes, the following results were obtained: mean, median, mode, and standard deviation. In the result control class, Pretest, the data were obtained, namely, Mean (61.47), Median (64.00), Mode (64), and standard deviation (7.314), as well as the highest score of 72 and the lowest score of 48. Alternatively, this can be seen more clearly in the following table.

Table 6. Description of Pretest Data for Throwing Skills in the Control Class.

Statistics		
CLASS CONTROL PRETEST INDEX SCORE		
N	Valid	30
	Missing	0
Mean		61.47
Median		64.00
Mode		64
Std. Deviation		7.314
Variance		53.499
Range		24
Minimum		48
Maximum		72

In the experimental class, the pretest results were obtained, namely, Mean (62.53), Median (64.00), Mode (60), and Standard Deviation (10,789), as well as the highest value of 76 and the lowest value of 40. For more details, refer to the following table.

Table 7. Description of *Nyurat lontar* Skill Data before Receiving Treatment (Pretest) in Experimental Class

Statistics		
EXPERIMENTAL CLASS PRETEST INDEX SCORE		
N	Valid	30
	Missing	0
Mean		62.53
Median		64.00
Mode		60
Std. Deviation		10.789
Variance		116.395
Range		36
Minimum		40
Maximum		76

After the results were obtained, a homogeneity test was carried out using the Pretest value. What are the results? Are the control class and the experimental class homogeneous or not? A

homogeneity test is a statistical test that shows that two or more

Data sample groups from the population had the same level of variance (Sianturi, 2022). The homogeneity test obtained a significance data of 0.070, where the result, if viewed from the basis of decision-making, indicates that if the sig > 0.50, the data distribution is said to be homogeneous, meaning the results of the homogeneity test of the results Pretest Between the control class and the experimental class are homogeneously distributed. To proceed to the next stage, namely, applying treatment to both the control and experimental classes to determine the results of the Posttest.

After deployment, post-test results in the control and experiment classes are as follows: Mean (66.67), Median (68.88), Mode (68), and Standard Deviation (6.835), with the highest score of 80 and the lowest score of 52. For more details, refer to the following table.

Table 8. Description of Posttest Data of Nyurat Skills in the control class.

Statistics		
CLASS CONTROL POSTTEST INDEX SCORE		
N	Valid	30
	Missing	0
Mean		66.67
Median		68.00
Mode		68
Std. Deviation		6.835
Variance		46.713
Range		28
Minimum		52
Maximum		80

In the experimental class, the Mean (81.73), Median (82.00), Mode (84), and Standard Deviation (3.591) were obtained, with the highest score of 88 and the lowest score of 72. For more details, refer to the following table.

Table 9. Description of *Nyurat lontar* Skill Data After Receiving Treatment (Posttest) in Experimental Class

Statistics		
EXPERIMENTAL CLASS POSTTEST INDEX SCORE		
N	Valid	30
	Missing	0
Mean		81.73
Median		82.00
Mode		84
Std. Deviation		3.591
Variance		12.892
Range		12
Minimum		76
Maximum		88

After obtaining the results of the Pretest, the purpose of the data normality test is to determine that the sample data comes from a normally distributed population. The sample data are derived from a pretest and a posttest. The normality test used in this study employs the Shapiro-Wilk normality test, supported by SPSS version 27 for Windows. The data normality test used in this study is the Shapiro-Wilk formula. The normality test was chosen by the researcher because it was effective in using a sample of fewer than fifty (Quraisy, 2020). The test criterion is that if the significance is > 0.05, then the data is normally distributed, while if the significance is < 0.05, then the data is not normally distributed.

Regarding the normality test using the Shapiro-Wilk, the pretest data on the Nyurat lontar skill in the control class yielded a significance of 0.229. This indicates that the significance level is greater than 0.05. In the experimental class, the *Nyurat lontar* skill had a significance of 0.127. It also explains that the significance level is > 0.05. Referring to the test results, it can be concluded that the pretest data on students' Nyurat lontar skills is normally

distributed. Furthermore, in the experimental class, the normality test using the Shapiro-Wilk test on the posttest data of the control class, Nyurat Lontar's skill, yielded a significance of 0.096. This explains the significance level of > 0.05. In the posttest data of the Nyurat skill lontar of the experimental class, a significance level of 0.224 was achieved. It also shows that the significance level is greater than 0.05. Referring to the test results, it can be concluded that the posttest data of students' *Nyurat lontar* skills is normally distributed.

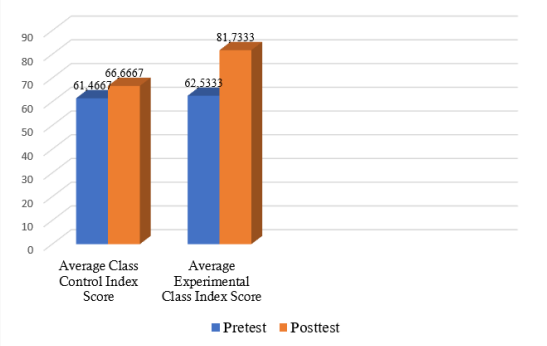

Figure 3. Comparison of Average Score in Both Classes

Based on the graph above, it is explained that the comparison of pretest and posttest scores in the two classes shows a significant difference. In the control class, there was an increase in the average score of the lontar nyurat skill, which initially had an average score of 61.67% and then rose to 66.67%. This indicates that the influence category for both pretest and posttest scores was in the high category, with a 5% increase. Furthermore, in the experimental class, it was demonstrated that there was an increase in the average score of the lontar writing skill, which initially had an average score of 62.33% and subsequently reached 81.33%.

Table 10. Effect Categories

No	Intervals	Effect Category
1	81-100%	Very High
2	61-80%	High
3	41-60%	Moderate
4	21-40%	Low
5	0-20%	Very Low

(Source: modified from Pradana & Mawardi, 2021)

This indicates an increase in the influence category, where the initial pretest score was in the high category, and after the posttest was administered, it rose to a very high category, with a 19% increase. This indicates that the influence of the Cooperative Learning model type STAD is very high on the throwing skills of Class X students at SMA Negeri 1 Pupuan. It can be seen from the comparison of the posttest results in the two classes that, in the control class, the increase was 5%, while in the experimental class, the increase was 19%.

Based on the results of the Independent Samples Test hypothesis test, it is explained that the hypothesis test of the lontar nyurat skill obtained a significance (2-tailed) of (0.000), where the result if seen from the basis of decision-making if sig (2-tailed) < 0.05, then Ha is accepted and H0 is rejected where the test results explain that there is a significant difference between the control class nontar nyurat skill and the skill Experimental class lontar nyura, where in the experimental class the Cooperative learning model type STAD is applied, it shows that the use of the model has an effect on students' lontar writing skills. These significant differences support the notion that learning with the lontar nyurat material is more effectively applied to the Cooperative Learning model type STAD.

The improvement of lontar writing skills with the Cooperative learning model type STAD

is influenced by several factors built into the learning model. Among other things, there is an increase in social skills, as well as an improvement in teamwork skills, communication between teams, and mutual respect between heterogeneous students, all of which are fostered through group work in STAD. This improvement is an important capital that can later be useful outside the classroom. In addition, there is also an increased sense of Individual and Group Responsibility: the Cooperative Learning model type STAD forces each team member to be responsible for the material given by the teacher, as the success of the team depends on the individual skill score of each group member. This creates a positive pressure to help one another and ensure that all group members understand the material. The use of the Cooperative Learning model type STAD as a motivational tool. This can encourage students who receive low points to be motivated by their peers who receive high points.

Learning model STAD Type Cooperative also has a significant influence on improving learning, for example, research conducted by (Astari et al., 2023). The results of Astari et al. (2023) show that the Bali Proverbs increased after the implementation of the STAD Type Cooperative learning model. This research also demonstrates that the STAD-type cooperative learning model has a positive impact on improving students' skills. Furthermore, research conducted by Jayawangsa, (2024). This study obtained the results that the learning model STAD Type Cooperative also has an influence on increasing students' interest in learning in the subject of learning *miarsa* with the help of the audio of Balinese Pop songs. In comparison to this research, it also demonstrates that the STAD-type cooperative learning model has a positive impact on improving student skills. The last of the research used by the researcher was research conducted by Aprianingsih (2024) that research obtained the following result. The implementation of the wordwall-assisted STAD learning model is effective in improving students' collaboration skills. This research also demonstrates that the STAD-type cooperative learning model has a positive impact on improving students' skills.

Based on the results of previous research, it can be concluded that the use of the STAD Type Cooperative learning model has a significant influence in the field of education. The use of learning models, such as STAD Type Cooperative, can improve student learning outcomes, especially in materials that involve writing tasks. This indicates that the learning model is suitable for application in learning activities.

CONCLUSION

Based on the results and discussions that have been described previously about the influence of the Cooperative learning model type STAD on the throwing skills of class X students of SMA Negeri 1 Pupuan, it can be concluded that the use of the STAD Type Cooperative Learning Model has a very high effect on students' throwing skills. This can be evidenced by the acquisition of posttest scores between the control class and the experimental class, with 66.67% of the control class in the high category and 81.33% of the experimental class in the very high category. Furthermore, based on the independent hypothesis test, the *Nyurat lontar* skill was obtained with a significance (2-tailed) of 0.000. These results are based on the decision-making framework, where if p-value (2-tailed) < 0.05, Ha is accepted and H0 is

rejected. This shows that the Cooperative Learning model type STAD affects the throwing skills of class X students at SMA Negeri 1 Pupuan.

This indicates that the use of the Cooperative Learning model type STAD is suitable for the learning process, as it enables learning activities to run more effectively and efficiently, particularly in Balinese language learning. For teachers and schools, if a class is one where students' focus on learning is disrupted by the teacher, then the use of the Cooperative Learning model type STAD can be an alternative to overcome these problems. Suggestions for further research to apply the Cooperative Learning model type STAD in other learning materials, demonstrating that although this learning model is an old one, it remains effective in overcoming learning process problems.

ACKNOWLEDGEMENTS

This research cannot be completed without the support of a certain party involved. First, it is almost certain that it's the Mpu Kuturan State Hindu Institute that helped the researcher accomplish such an achievement and develop his skills, should he need them in the future. The second party that supports the researcher is SMA Negeri 1 Pupuan, as they allowed the researcher to conduct the necessary experiments to complete this journal. And last but not least is the family member of the researcher, because they are the ones who support him all the way from the beginning until the very end.

REFERENCES

Aprianingsih, T. R. I. (2024). *Skripsi Implementasi Model Pembelajaran Kooperatif Tipe Stad Berbantuan Wordwall Untuk Meningkatkan Keterampilan Kolaborasi Dan Penguasaan Konsep IPA SMP*.

Astari, N. T., Wayan, G. W. I., & Ayu, S. W. I. (2023). Meningkatkan Keterampilan Paribasa Bali Dengan Model Pembelajaran Kooperatif Tipe Stad (Student Teams Achevement Division). *Jurnal Pendidikan Bahasa Bali Undiksha*, *10*(1), 24–31.

Dewi, S. M., & Insani, N. H. (2024). Development of 4C-Integrated Karthon (Kartu Pacelathon) as an Innovative Learning Media for Javanese Dialogue. *Al-Ishlah: Jurnal Pendidikan*, *16*(3), 3524–3536. https://doi.org/10.35445/alishlah.v16i3.5445

Febriani, N. W. A., & Insani, N. H. (2024). Efektivitas Model CIRC Menggunakan Media Scrabble Aksara Jawa Terhadap Hasil Menulis Huruf Jawa. *Piwulang : Jurnal Pendidikan Bahasa Jawa*, *12*(2), 141–153. https://doi.org/10.15294/piwulang

Ghufron, S. (2023). The effect of STAD-type cooperative learning based on a learning tool on critical thinking ability in writing materials. *International Journal of Instruction*, *16*(1), 61–84.

Hamdi, S. (2016). Peranan Pendidikan Dalam Pengembangan Diri Terhadap Tantangan Era Globalisasi. *Jurnal Ilmiah Prodi Manajemen Universitas Pamulang*, *3*(2), 92–119.

Inayati, I., Kusstianti, N., & Lutfiati, D. (2024). Penerapan Model Pembelajaran Problem Based Learning (Pbl) Pada Kompetensi Dasar Pengeritingan Rambut Dasar Dengan Menggunakan Media Video Di SMK Negeri 3 Kediri. *Jurnal Tata Rias*, *13*(1), 29–37.

Insani, N. H., & Kholiq, Y. N. (2025). *Exploring Learning Difficulties and Causal Factors in Javanese Scripts : Student and Teacher Perspectives in Indonesian High School*. *4*, 642–662. https://doi.org/10.46843/jpm.v4i3.511

Jayawangsa, I. G. A. R. (2024). Pembelajaaran Miarsa Dengan Model Pembelajaran Cooperative Learning Tipe Stad Berbantuan Audio Lagu Pop Bali. *Subasita: Jurnal Sastra Agama Dan Pendidikan Bahasa Bali*, *4*(2).

Kholiq, Y. N., Maesyaroh, W., & Insani, N. H. (2024). Internalization of the Tri Rahayu Concept as a Prevention Effort Bullying at School Internalisasi. *Pakar Pendidikan*, *22*(1), 156–168.

Kholiq, Y. N., Nurhayati, E., & Purwadi. (2024). Problematics of Learning Javanese Script And Alternative Solutions : A Literature Review. *Journal of Innovation in Educational and Cultural Research*, *5*(4), 713–722. https://doi.org/10.46843/jiecr.v5i4.2052

Pradana, F. A. P., & Mawardi, M. (2021). Pengembangan Instrumen Penilaian Sikap Disiplin Menggunakan Skala Likert dalam Pembelajaran Tematik Kelas IV SD. *Fondatia*, *5*(1), 13–29. https://doi.org/10.36088/fondatia.v5i1.1090

Quraisy, A. (2020). Normalitas Data Menggunakan Uji Kolmogorov-Smirnov dan Saphiro-Wilk: Studi kasus penghasilan orang tua mahasiswa Prodi Pendidikan Matematika Unismuh Makassar. *J-HEST Journal of Health Education Economics Science and Technology*, *3*(1), 7–11.

Rahmawati, W. D., Yuliawati, A., & Fateah, N. (2024). Penggunaan Pembelajaran Model Kooperatif

Tipe Jigsaw Sebagai Upaya Meningkatkan Kemampuan Membaca Pemahaman Materi Novel Jawa. *Piwulang : Jurnal Pendidikan Bahasa Jawa*, *12*(2), 204–212. https://doi.org/10.15294/piwulang

Sappaile, B. I., Ahmad, Z., Hita, I. P. A. D., Razali, G., Dewi, R. D. D. L. P., & Punggeti, R. N. (2023). Model Pembelajaran Kooperatif: Apakah efektif untuk meningkatkan motivasi belajar peserta didik? *Journal On Education*, *6*(1), 6261–6269.

Sianturi, R. (2022). Uji homogenitas sebagai syarat pengujian analisis. *Jurnal Pendidikan, Sains Sosial, Dan Agama*, *8*(1), 386–397.

Siswanto, A. (2017). Pelaksanaan program rintisan wajib belajar 12 tahun pada sekolah menengah atas negeri di kabupaten Bantul. *Hanata Widya*, *6*(7), 55–65.

Sukoyo, J., Kurniati, E., Utami, E. S., & Insani, N. H. (2023). Workshop Model-Model Pembelajaran Bahasa Jawa Berbasis Joyful Learning. *Bakti Cendana; Jurnal Pengabdian Masyarakat*, *6*(1), 155–164.

Suparmini, M. (2021). Penerapan model pembelajaran kooperatif tipe stad untuk meningkatkan aktivitas dan hasil belajar. *Journal of Education Action Research*, *5*(1), 67–73.

Suriyanto, D., Taufik, L., & Mubarak, S. (2020). Pengaruh Model Pembelajaran Kooperatif Tipe Stad Terhadap Hasil Belajar Materi Asam Basa. *Spin Jurnal Kimia & Pendidikan Kimia*, *2*(2), 132–145.

Utari, D., & Muadin, A. (2023). Peranan pembelajaran abad-21 di sekolah dasar dalam mencapai target dan tujuan kurikulum merdeka. *Jurnal Pendidikan Islam Al-Ilmi*, *6*(1), 116–123.

Wedawati, P. A. G. (2023). Meningkatkan Kemampuan Membaca Gancaran Melalui Metode Pembelajaran Student Team Achievement Divisions. *Indonesian Journal of Educational Development (IJED)*, *3*(4), 495–505.

Witasari, R. (2023). Belajar dan Pembelajaran dari perspektif Teori kognitif, behaviorisme Konstruktivisme dan sosiokultural. *BASICA*, *3*(2), 257–268.

Wulan, A., Rahman, N., & Insani, N. H. (2025). *Piwulang : Jurnal Pendidikan Bahasa Jawa Efektivitas Model Pembelajaran Kooperatif Tipe Tea Party*. *13*(1), 72–82. https://doi.org/10.15294/piwulang