

The Effect of Two Stay Two Stray Assisted by Flip Chart Media on Fifth-Grade Students' Written Communication Skills

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ABSTRACT

This study aimed to examine the effect of the Two Stay Two Stray (TSTS) cooperative learning model assisted by flip chart media on fifth-grade students' written communication skills in Indonesian language learning compared with the Direct Instruction (DI) model. A quasi-experimental method with a nonequivalent control group design was employed, involving 38 fifth-grade students at MI Tegalpanjang. Data were collected through validated and reliable pretest-posttest essay tests and analyzed using normality and homogeneity tests, an independent-samples t-test, N-Gain analysis, and Cohen's d effect size. The experimental class achieved a mean posttest score of 83.06 (high category) with an N-Gain of 0.70, whereas the control class obtained 73.47 (moderate category) with an N-Gain of 0.58. The independent-samples t-test revealed significant differences between the groups in posttest scores ($p = 0.034$) and N-Gain values ($p = 0.047$). Both models produced large effects, but the effect in the experimental class ($d = 2.991$) was considerably greater than in the control class ($d = 1.664$). It can be concluded that the TSTS model assisted by flip chart media is more effective than the Direct Instruction model in improving elementary school students' written communication skills in Indonesian language learning.

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Introduction

Communication is a fundamental human need that underlies all aspects of daily life, including education. Effective communication enables students to build meaningful and sustainable learning interactions with teachers and peers, and the habit of

communicating effectively needs to be fostered from an early age (Hidayah et al., 2025). In Indonesian language learning, communication skills are reflected not only in oral expression but also in written communication, namely students' ability to express ideas in writing that is accurate, complete, and clear. Recent studies of fifth-grade students show that communication skills in Indonesian language learning are still uneven, as some students lack confidence in expressing their ideas (Isabella & Mastiah, 2026), so communication skills need to be developed continuously as an essential learning outcome (Pratiwi et al., 2022).

Classroom practices indicate that Indonesian language instruction in many schools remains teacher-centered and predominantly one-way, limiting students' opportunities to develop their written communication skills. A preliminary study in Grade V at MI Tegalpanjang, Tasikmalaya Regency, revealed that students frequently made errors in spelling, punctuation, and sentence structure and were unable to express their ideas coherently and systematically. Initial data showed that only 9 of 19 students achieved the Minimum Learning Achievement Criterion (KKTP) of 75 in Indonesian language learning. Similar difficulties with spelling, punctuation, capitalization, and neatness of writing have been reported among fifth-grade students in other elementary schools (Husna et al., 2024).

One alternative to address this issue is the Two Stay Two Stray (TSTS) cooperative learning model. In this model, two members of each group remain in their original group to share their discussion results, while the other two visit other groups to gather information, after which they return and combine their findings (A'yunina et al., 2025). Consequently, students engage in repeated writing activities within a single learning session, including recording their own group discussions, taking notes on information obtained from other groups, and preparing a final written report. This structure is consistent with Vygotsky's view that cognitive development is optimized through scaffolding during social interaction with more capable peers (Hartiningrum & Wahab, 2024). A recent review concluded that TSTS consistently improves learning outcomes as well as students' communication, cooperation, and participation across levels of education (Afifah et al., 2026). The model has also been shown to improve elementary students' critical thinking (Leniati & Indarini, 2021), senior high school students' mathematical communication (Gulo & Mendrofa, 2024), and junior high school students' response-text writing (Afifah et al., 2025).

The effectiveness of TSTS in this study was further supported by flip chart media as a visual instructional aid. The structured presentation of summarized material on flip charts helps students understand and organize their ideas before expressing them in writing; flip chart media have been shown to improve elementary students' reading comprehension in Indonesian language learning (Rahmadani & Oktaviani, 2025). Visual media that are close to children's world, such as comics, have also been found to increase students' enthusiasm and improve their writing skills in Indonesian language learning (Sumirat et al., 2024). In this study, the integration of TSTS and flip chart media was intended to develop three indicators of written communication, namely writing accuracy, content completeness, and content clarity. As a comparison, the control class was taught using the Direct Instruction (DI) model, which emphasizes structured teacher-centered instruction but provides fewer opportunities for interaction among students.

A previous classroom action research study involving Grade V students at MI Mangunsari found that TSTS gradually improved students' communication skills from a very low to a very high category in Integrated Science and Social Studies (IPAS) learning (Latipah, 2025). Other studies have reported that project-based and collaborative learning enhance elementary students' creative writing in thematic Indonesian language learning

(Jaenudin et al., 2025) and that structured language activities strengthen fifth-grade students' reading comprehension (Deka et al., 2024). However, studies that combine TSTS with flip chart media to develop written communication skills in Indonesian language learning at Madrasah Ibtidaiyah using a quasi-experimental design are still limited. Therefore, this study aims to describe the written communication skills of students taught using TSTS assisted by flip chart media and of those taught using the Direct Instruction model, to examine the effect of TSTS assisted by flip chart media, and to analyze the difference in the mean improvement of written communication skills between the experimental and control classes among Grade V students at MI Tegalpanjang.

Method

This study employed a quantitative approach using a quasi-experimental method with a nonequivalent control group design. The research was conducted at MI Tegalpanjang, Tanjungjaya District, Tasikmalaya Regency, Indonesia, from April to May 2026. The sample consisted of 38 fifth-grade students in two intact classes. Class V-B (19 students) served as the experimental class and was taught using TSTS assisted by flip chart media, while Class V-A (19 students) served as the control class and was taught using the Direct Instruction model; in each class, 16 students attended all research sessions. The intervention was implemented over four sessions covering the second-semester Merdeka Curriculum topics, namely the Indonesian prefix *ter-*, conjunctions, response and suggestion sentences, and speech. The research design and the TSTS learning steps are presented in Figure 1.

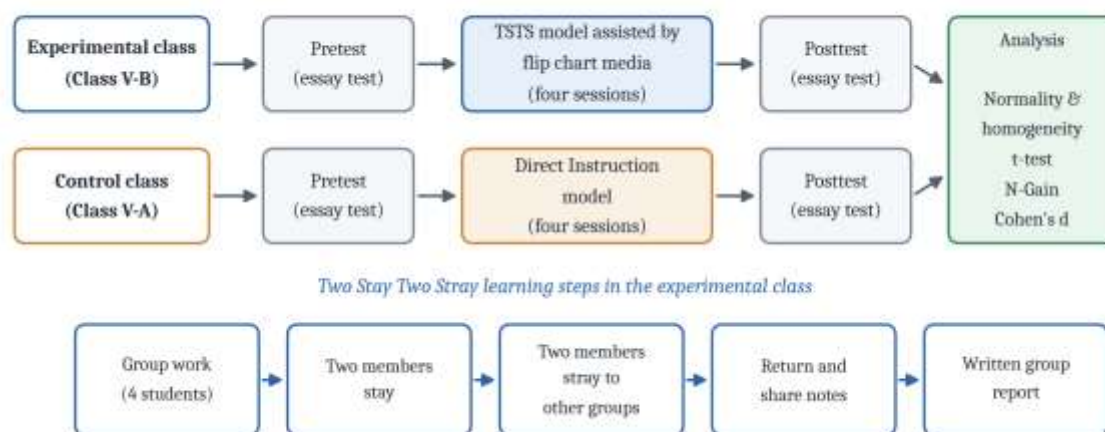


Figure 1. Research Design and Two Stay Two Stray Learning Steps

The instrument consisted of pretest and posttest essay tests assessing three indicators of written communication skills, namely writing accuracy, content completeness, and content clarity. Item validity was tested using the Pearson product-moment correlation, and eight of the ten items met the validity criterion ($r > 0.468$). Reliability was examined using Cronbach's alpha, yielding a coefficient of 0.883, which indicates very high reliability. Item difficulty and discrimination indices were also analyzed before the instrument was administered, and teacher and student observation sheets were used to collect supporting non-test data.

The data were analyzed using the Shapiro–Wilk normality test, Levene’s test of homogeneity, and the independent-samples t-test at a significance level of 0.05. The improvement in students’ scores was analyzed using normalized gain (N-Gain), which is widely used to measure the effectiveness of learning in elementary teacher education research (Wahab et al., 2021). The magnitude of the effect of each instructional model was measured using Cohen’s d effect size and interpreted following recommendations for education interventions (Kraft, 2020). All statistical analyses were performed using IBM SPSS Statistics version 27.

Results and Discussion

The pretest and posttest results of both classes indicated an improvement in students’ written communication skills after the instructional interventions. A summary of the mean pretest and posttest scores is presented in Table 1 and illustrated in Figure 2.

Table 1. Mean Pretest and Posttest Scores of Students’ Written Communication Skills

Class	Pretest	Posttest
Experimental (TSTS)	44.45	83.06
Control (DI)	39.31	73.47

Source: Pretest and posttest results, processed by the authors.

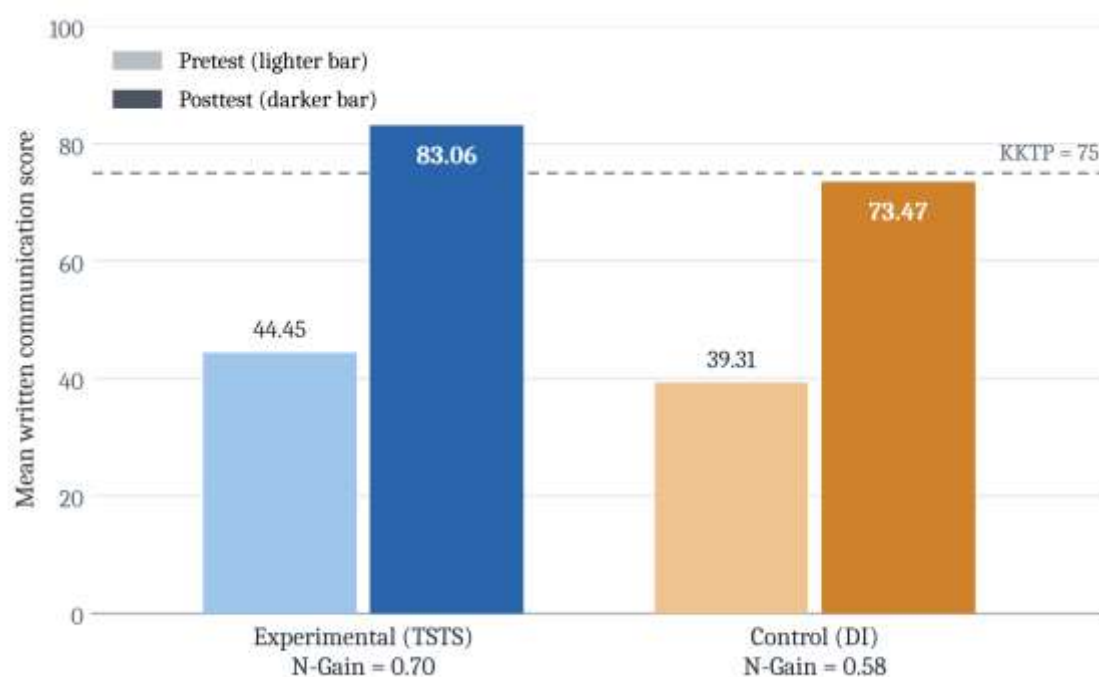


Figure 2. Mean Pretest and Posttest Scores and N-Gain of Written Communication Skills in the Experimental and Control Classes

The experimental class showed a mean improvement of 38.61 points, from 44.45 on the pretest to 83.06 on the posttest, whereas the control class improved by 34.16 points, from 39.31 to 73.47. The posttest mean of the experimental class was in the high category and exceeded the KKTP of 75, while the posttest mean of the control class was in the moderate category and remained below the KKTP, as shown in Figure 2. These findings support the view that elementary school students’ communication skills can be improved

through appropriate instructional interventions (Pratiwi et al., 2022). To determine the relative improvement, an N-Gain analysis was conducted, as presented in Table 2.

Table 2. Mean N-Gain Scores of Students' Written Communication Skills

Class	N-Gain	Category
Experimental (TSTS)	0.70	Moderate
Control (DI)	0.58	Moderate

Source: N-Gain analysis, processed by the authors.

Both classes achieved moderate N-Gain scores; however, the experimental class obtained a higher N-Gain (0.70), approaching the high category, than the control class (0.58). This indicates that TSTS assisted by flip chart media produced a greater relative improvement in students' written communication skills. The pretest, posttest, and N-Gain data of both classes were normally distributed (Shapiro–Wilk test, $p > 0.05$) and homogeneous (Levene's test, $p > 0.05$), so hypothesis testing was conducted using the independent-samples t-test, as presented in Table 3.

Table 3. Independent-Samples t-Test Results

Variable	Sig. (2-tailed)	Decision
Pretest	0.412	H0 accepted
Posttest	0.034	H1 accepted
N-Gain	0.047	H1 accepted

Note: Significance level $\alpha = 0.05$.

The independent-samples t-test on the pretest scores yielded a p-value of 0.412 ($p > 0.05$), indicating no significant difference between the initial performance of the experimental class (44.45) and the control class (39.31), so the two classes were considered equivalent before the intervention. In contrast, the posttest analysis produced a p-value of 0.034 ($p < 0.05$), indicating a significant difference in favor of the experimental class, which outperformed the control class by 9.59 points. The N-Gain analysis yielded a p-value of 0.047 ($p < 0.05$), confirming that the improvement in the experimental class (0.70) was significantly greater than that in the control class (0.58). The magnitude of the effect of each instructional model is presented in Table 4.

Table 4. Cohen's d Effect Size Results

Class	Cohen's d	Category
Experimental (TSTS)	2.991	Large
Control (DI)	1.664	Large

Source: Effect size analysis, processed by the authors.

Both instructional models demonstrated large effect sizes. However, the experimental class achieved a substantially higher Cohen's d value (2.991) than the control class (1.664), indicating that TSTS assisted by flip chart media exerted a considerably stronger effect on students' written communication skills than the Direct Instruction model. A similarly large effect of TSTS has been reported for elementary students' cooperative attitudes (A'yunina et al., 2025), which reflects the strength of the stay–stray interaction structure.

The improvement in the experimental class can be attributed to the structure of TSTS, which requires students to write repeatedly through the stay and stray roles, combined with flip chart media that help students organize their ideas systematically before writing. The three indicators of written communication were developed in an integrated manner across the four sessions. The learning progressed from the prefix ter-, which emphasized writing accuracy, to conjunctions that strengthened sentence coherence, response and suggestion sentences that developed argumentative writing, and finally speech writing, which required students to integrate all writing skills into a comprehensive text. This sequential and structured design is in line with findings that well-designed learning materials and worksheets guide students to construct understanding actively (Sundari, Gani, et al., 2025).

Although the control class taught through Direct Instruction also improved, the gains were less pronounced. The teacher-centered and predominantly one-way approach limited students' opportunities to process and express their ideas independently, so their responses to higher-order questions tended to be simpler and less comprehensive. These results are consistent with the classroom action research at MI Mangunsari, which reported gradual improvements in fifth-grade students' communication skills through TSTS (Latipah, 2025), and with studies showing that TSTS improves students' writing skills at the elementary and junior high school levels (Afifah et al., 2025; Husna et al., 2024). Although the previous studies used different subjects, designs, or media, the consistent results suggest that the improvement in written communication achieved through TSTS is robust across learning contexts. The findings also agree with studies showing that collaborative learning improves elementary students' creative writing (Jaenudin et al., 2025) and that structured language activities strengthen students' language skills (Deka et al., 2024).

From a theoretical perspective, the effectiveness of TSTS assisted by flip chart media can be explained through Vygotsky's zone of proximal development, in which scaffolding by more capable peers enables students to reach higher levels of development (Hartiningrum & Wahab, 2024). The interactions during the stay and stray phases create intensive scaffolding opportunities that allow students to construct their understanding before transforming it into written expression. These findings are also in line with the Merdeka Curriculum, which emphasizes student-centered and collaborative learning (Nugroho et al., 2025), and with evidence that active learning supported by visual media improves elementary students' creative thinking (Kusumawati et al., 2025).

From a practical perspective, shifting the teacher's role from the main source of information to a learning facilitator does not reduce instructional effectiveness; instead, it provides students with greater opportunities to develop their written communication skills independently. The simplicity and affordability of flip chart media make this approach suitable for schools with limited technological resources, although teachers still need the ability to integrate pedagogy, content, and media appropriately when designing learning (Sundari, Yufiarti, & Bintoro, 2025). This study was limited to two classes in one madrasah, and several students did not attend all sessions, so the results should be generalized with caution.

Conclusion

This study concludes that the written communication skills of fifth-grade students taught using the Two Stay Two Stray model assisted by flip chart media improved from a

mean pretest score of 44.45 to a mean posttest score of 83.06 (high category), exceeding the KKTP of 75, with an N-Gain of 0.70 and a large effect size ($d = 2.991$), whereas students taught using the Direct Instruction model improved from 39.31 to 73.47 (moderate category), remaining below the KKTP, with an N-Gain of 0.58 and a smaller, although still large, effect size ($d = 1.664$). The independent-samples t-test showed significant differences between the two classes in posttest scores ($p = 0.034$) and N-Gain values ($p = 0.047$), indicating that the Two Stay Two Stray model assisted by flip chart media has a greater effect than Direct Instruction on students' written communication skills in Indonesian language learning. The novelty of this study lies in integrating the Two Stay Two Stray model with flip chart media designed to develop writing accuracy, content completeness, and content clarity in the context of Madrasah Ibtidaiyah, so this approach is recommended as an alternative learning model that actively engages students through collaboration and should be further investigated across different materials, grade levels, and larger samples.

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Author Contributions

Conceptualization: LN, TF; Methodology: LN, TF, AYR; Investigation: LN; Formal analysis: LN, TF; Writing – original draft: LN; Writing – review & editing: TF, AYR; Supervision: TF, AYR.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Use of Artificial Intelligence

The authors used Grammarly to assist with grammar checking, language refinement, and improvements in sentence clarity and readability. All AI-assisted suggestions were carefully reviewed and verified by the authors, who take full responsibility for the accuracy, originality, and final content of the manuscript.

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