E-ISSN: 3031-8629
P-ISSN: 3032-3258
Halaman 227-237
Volume 2 Nomor 4 Tahun 2025

Student Team Learning (STL) Skills in Relation to Motivation at SMKN 5 Mataram

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Abstrak

Studi ini mengkaji keterampilan membaca melalui metode Student Team Learning (STL) dan Problem-Based Learning (PBL), dengan motivasi peserta didik sebagai variabel moderator, di SMKN 5 Mataram. Penelitian kuantitatif kuasi-eksperimental ini menggunakan kerangka faktorial dua kali dua (2x2). Dua kelas yang sudah terbentuk, yaitu kelas X OTOTRONIK dan X TSM, dilibatkan dengan total 52 siswa (masing-masing kelompok terdiri dari 26 siswa). Data diperoleh melalui tes awal (*pre-test*) dan tes akhir (*post-test*) keterampilan membaca, serta kuesioner motivasi. Statistik deskriptif dihitung ulang berdasarkan tabel skor individu, sementara hasil analisis faktorial dilaporkan sebagaimana tercantum dalam tesis tersebut. Pada kelas STL, nilai rata-rata *pre-test* dan *post-test* adalah 74,73 dan 84,88, sedangkan pada kelas PBL masing-masing adalah 52,04 dan 74,77. Kedua kelas menunjukkan peningkatan, dengan kelas PBL mencatatkan kenaikan (yang belum disesuaikan) yang lebih besar. Hasil analisis faktorial menunjukkan adanya perbedaan antar kelompok pembelajaran, $F(1, 48) = 24{,}265$, $p < 0{,}001$; tidak ditemukan efek utama motivasi, $F(1, 48) = 0{,}265$, $p = 0{,}609$; serta terdapat interaksi, $F(1, 48) = 5{,}535$, $p = 0{,}023$. Namun, hasil tersebut menggunakan nilai rata-rata deskriptif yang tidak konsisten dengan tabel skor individu. Oleh karena itu, temuan ini hanya mendukung penjelasan deskriptif yang bersifat hati-hati mengenai perbedaan antar kelas; hasil interaksi yang dilaporkan perlu diselaraskan kembali dengan kumpulan data asli sebelum dapat diinterpretasikan secara substantif. Ketidakseimbangan kondisi awal (*baseline*) serta klasifikasi motivasi yang tidak konsisten juga membatasi penarikan kesimpulan mengenai hubungan sebab-akibat.

Kata kunci: pembelajaran kooperatif; Student Team Learning; keterampilan membaca; motivasi; pendidikan vokasi

Abstract

This study examined reading skills under Student Team Learning (STL) and problem-based learning (PBL), with learner motivation as a proposed moderator at SMKN 5 Mataram. A quantitative quasi-experimental study used a two-by-two factorial framework. Two intact classes, X OTOTRONIK and X TSM, comprised 52 students, with 26 in each instructional group. Reading pre-tests, post-tests, and a motivation questionnaire provided the data. Descriptive statistics were recalculated from the score table. The STL class had pre-test and post-test means of 74.73 and 84.88, compared with 52.04 and 74.77 in the PBL class. Both classes improved, although the PBL class showed the larger unadjusted gain. The reported factorial output indicated an instructional-group difference, $F(1, 48) = 24.265$, $p < .001$; no motivation main effect, $F(1, 48) = 0.265$, $p = .609$; and an interaction, $F(1, 48) = 5.535$, $p = .023$. However, that output used descriptive means inconsistent with the individual score table. The findings therefore support a cautious descriptive account of classroom differences; the reported interaction requires reconciliation with the original dataset before substantive interpretation. Baseline imbalance and inconsistent motivation classification also limit causal conclusions.

Keywords: cooperative learning; Student Team Learning; reading skills; motivation; vocational education

INTRODUCTION

English reading requires learners to connect information across sentences, identify relevant details, and interpret a text in relation to a task. In vocational education, these abilities can help students understand written learning materials and prepare for further study or workplace communication. Classroom reading instruction therefore needs to provide opportunities for students to explain what they understand and to receive support when meaning is unclear. Reading achievement may depend on both the organization of instruction and students' willingness to remain engaged with difficult material.

Cooperative learning offers one way to organize that support. Students work towards shared learning goals while retaining responsibility for their own understanding. Johnson and Johnson (2009) explained the role of social interdependence in structuring productive cooperation. Slavin (2014) reviewed motivational, social, developmental, and cognitive explanations for achievement under groupwork. Together, these perspectives suggest that the educational value of teamwork depends on how participation and accountability are organized, rather than on placing students in groups alone.

Student Team Learning (STL), as used in the present study, refers to instruction that brings learners with different abilities together to discuss learning materials and support one another's progress. In a reading lesson, students may compare interpretations, discuss unfamiliar language, and justify answers using a text. Such exchanges can make misunderstandings visible and allow peers to offer explanations. Gillies (2016) emphasized the importance of teacher guidance and supportive interaction in cooperative learning. These principles offer a rationale for examining STL in an English classroom, although the mechanisms must be distinguished from outcomes actually measured.

Motivation provides a related perspective on reading participation. Students may read because a text is interesting, because they value its usefulness, or because they wish to satisfy external expectations. Ryan and Deci (2020) distinguished forms of motivation within self-determination theory and discussed their educational implications. Schiefele et al. (2012) reviewed dimensions of reading motivation and their relationships with reading behavior and competence. These contributions indicate that a single high-versus-low grouping may simplify a construct with several dimensions.

Local research also provides a basis for investigating peer-oriented reading instruction. Imran and Sandiarsa S. (2018) examined Teammates Consult in relation to motivation and narrative reading among teacher-education students. Their findings make structured peer consultation relevant to the present topic, but the university setting and instructional procedure differ from those of a vocational school.

Consequently, their study supports the rationale for further investigation rather than establishing that every cooperative strategy has the same effect.

Other work involving lecturers from Universitas Pendidikan Mandalika addresses related instructional and motivational concerns. Hasby and Iswara (2019) examined Memories and Draw in reading instruction, while Isgaf et al. (2024) investigated Fan-N-Pick and interest in reading comprehension in a vocational-school context. Firman and Sandiarsa S. (2024) discussed the contribution of supportive relationships, peer interaction, and classroom conditions to motivation. These studies collectively locate the current inquiry within regional English-education research, while retaining the distinction between reading performance, interest, and motivation.

This study identified limited student interaction and concerns about engagement at SMKN 5 Mataram. It compared STL with an instructional condition described as problem-based learning (PBL). PBL itself can involve active collaboration, so the comparison should not be interpreted as a general contrast between active and passive teaching. The relevant issue is how the two classroom implementations were associated with reading outcomes in this setting.

The study addressed three questions: whether reading performance differed between the STL and PBL classes, whether performance differed between students classified by motivation level, and whether instructional group and motivation interacted. Roseth et al. (2008) provide broader evidence for the relationship between cooperative goal structures, achievement, and peer relationships. The present study contributes a context-specific comparison, while the consistency of the available scores and statistical output determines how confidently its findings can be interpreted.

METODE

This study employed a quantitative approach with a quasi-experimental pre-test–post-test design incorporating a 2 × 2 factorial arrangement. It investigated the effects of Student Team Learning (STL) and Problem-Based Learning (PBL) on

students' reading achievement across high and low motivation levels. A quasi-experimental design was appropriate because instruction was delivered to existing classes without randomly assigning individual students to treatment conditions (Creswell & Creswell, 2018).

The population comprised students from four classes at SMKN 5 Mataram. Two intact classes were selected through cluster random sampling using a lottery procedure. The sample consisted of 52 students: 26 students from class X OTOTRONIK formed the experimental group receiving STL instruction, while 26 students from class X TSM formed the comparison group receiving PBL instruction.

Data were collected using a reading test and a motivation questionnaire. The reading test consisted of 25 multiple-choice questions and was administered before and after the instructional treatment to assess students' initial and subsequent reading achievement. Correct answers received one point, while incorrect answers received zero points. Total scores were converted to a 0–100 scale by dividing the number of correct answers by 25 and multiplying the result by 100. The motivation questionnaire contained 25 Likert-type items addressing students' motivation toward reading. Questionnaire scores provided the basis for identifying students' motivation levels.

Data were analyzed using IBM SPSS Statistics version 25. Descriptive statistics, including the mean, median, mode, and standard deviation, summarized reading achievement and motivation scores. Normality and homogeneity of variance were examined before the inferential analysis. A two-way analysis of variance (ANOVA) was used to examine the main effects of teaching strategy and motivation level, as well as their interaction, on reading achievement. Factorial ANOVA allows researchers to examine whether the relationship between one factor and a continuous outcome differs across the levels of another factor (Field, 2018).

RESULT AND DISCUSSION

The individual score records showed higher average reading scores in the STL class at both measurement points. Table 1 presents statistics recalculated. The STL

mean increased from 74.73 to 84.88, while the PBL mean increased from 52.04 to 74.77. These descriptives show improvement within both classes, together with a substantial pre-existing difference between them.

Table 1. Reading scores recalculated from the individual records

Group	n	Pre-test M (SD)	Post-test M (SD)	Mean change
STL	26	74.73 (6.74)	84.88 (4.71)	10.15
PBL	26	52.04 (23.36)	74.77 (8.67)	22.73

The baseline difference was 22.69 points, compared with a post-test difference of 10.12 points. Thus, the group with the higher final score did not have the larger average gain. The PBL class increased by 22.73 points, whereas the STL class increased by 10.15 points. This pattern prevents the final-score difference from being interpreted by itself as evidence that STL produced greater improvement. The much larger baseline standard deviation in the PBL group further indicates that the two classes began with different score distributions.

The factorial descriptive output elsewhere reported different group means: 89.12 for STL and 83.96 for PBL. Its four cells each contained 13 students. The STL means were 88.15 for high motivation and 90.08 for low motivation; the corresponding PBL means were 85.46 and 82.46. These figures are presented as the source of the factorial interpretation, not as replacements for the individual records summarized in Table 1. They cannot be merged into one consistent dataset without the original scoring and SPSS files.

Table 2. Factorial results in the output

Source	df	F	p
Instructional group	1, 48	24.265	$< .001$
Motivation	1, 48	0.265	.609

Source	df	F	p
Group × motivation	1, 48	5.535	.023

As printed, the factorial table indicated a statistically significant instructional-group difference and interaction, but no motivation main effect. The statistical table gives p = .609 for motivation, which does not meet the .05 criterion. Consequently, the current article does not repeat the claim that higher motivation generally led to superior reading performance. The overall high- and low-motivation means in that output were also close, at 86.81 and 86.27.

The interaction, if confirmed, would indicate that the instructional-group difference varied across motivation categories. The cell means suggest a smaller STL–PBL difference among high-motivation students than among low-motivation students. However, the crossover within the STL class, where the low-motivation mean exceeded the high-motivation mean, does not support a simple claim that high motivation was consistently advantageous. Simple-effects tests were not documented sufficiently to establish separate subgroup effects. More importantly, the uncertain classification procedure and inconsistent datasets prevent a firm substantive explanation of this interaction.

The assumption checks require similar care. Shapiro–Wilk table gave p = .208 for experimental post-test scores and p < .001 for control post-test scores. These are group-score tests rather than demonstrated residual diagnostics for the full factorial model. The narrative assertion that normality was satisfied for all groups is therefore not supported by the displayed table. A nonsignificant homogeneity result alone would not resolve this issue. Model diagnostics must be repeated on the reconciled dataset before the F tests are used as final evidence.

Within these limits, cooperative-learning theory offers a plausible explanation for why structured peer activity might support reading. Students who explain a passage must make their understanding explicit, while listeners can question unsupported answers. Slavin (2014) linked cooperative achievement to several

theoretical mechanisms, and Gillies (2016) highlighted the quality of interaction and instructional support. The present study did not measure peer explanations, time on task, or participation quality, so these mechanisms remain interpretations informed by the literature rather than observed mediators.

The local studies provide useful comparisons without resolving the present statistical problems. Imran and Sandiarsa S. (2018) reported favorable outcomes for Teammates Consult in motivation and narrative reading. Isgaf et al. (2024) examined a different cooperative structure, Fan-N-Pick, and reading interest in vocational education. Both indicate the relevance of organized peer participation to English teaching. Their findings cannot validate the STL dataset, and differences in participants, strategy, and outcome measures prevent a direct comparison of effect size.

Hasby and Iswara (2019) provide another regional example of instruction designed to support engagement with reading. Their Memories and Draw procedure differs from STL, illustrating that motivational support can be embedded in varied classroom activities. Firman and Sandiarsa S. (2024) further draw attention to supportive relationships and classroom conditions. These findings suggest that future STL research should document interaction and classroom climate alongside achievement, rather than treating the strategy label as a complete explanation of learning.

Motivation should also be measured with greater precision. Schiefele et al. (2012) identify multiple dimensions relevant to reading behavior and competence, while Ryan and Deci (2020) distinguish the quality of learners' reasons for participation. A clearly specified questionnaire, scoring key, administration time, and classification rule would allow a more defensible assessment of motivation. Retaining a validated continuous score may also be more informative than dividing students into two categories, especially when the source records label most learners as high or very high.

For teachers, the practical implication is to consider cooperative reading as a structured instructional option while checking what each learner understands.

Johnson and Johnson (2009) emphasize interdependence and accountability, and Roseth et al. (2008) connect cooperative goals with achievement and peer relationships across a broader evidence base. Teachers can draw on those principles when designing lessons, but the current comparison does not establish that STL should replace PBL or that it benefits one motivation category more than another.

The study is limited by its small, single-school sample, one classroom per condition, unequal baseline scores, and incomplete documentation of implementation and measurement. The disagreements among the abstract, individual score table, factorial descriptives, and hypothesis narrative are additional constraints. A defensible follow-up should reconcile the student-level records, verify the scoring scale and motivation timing, and rerun an analysis that considers baseline performance and classroom structure. Until those steps are completed, descriptive classroom differences are more secure than causal or moderation claims.

CONCLUSION

Both classes showed higher reading scores after instruction. STL students had higher final scores, while PBL students showed the larger unadjusted gain from a lower baseline. The study showed an instructional-group effect and interaction but no motivation main effect; inconsistent datasets prevent firm interpretation. Teachers may consider structured peer reading with individual accountability. Researchers should reconcile the original scores, clarify motivation measurement, and repeat the analysis before claiming STL superiority or a moderating role for motivation.

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