The Effects of the STAD Cooperative Learning Model on Improving Sixth-Grade Students' Reading Comprehension

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Abstract

The objectives of this research were to examine the effectiveness of the Student Teams Achievement Divisions (STAD) cooperative learning model in enhancing primary students' reading comprehension and to explore their level of satisfaction with this instructional strategy. The participants were 30 Sixth-Grade students from Ban Nong Khan School, selected through purposive sampling. The study was conducted during the second semester of the 2022 academic year.

The instructional materials included six lesson plans that integrated English reading instruction with fairy tales, aligning with the STAD cooperative learning framework. Data collection instruments comprised a 20-item multiple-choice English reading comprehension test, a satisfaction questionnaire with open-ended response items.

The results revealed a statistically significant improvement in students' reading comprehension after implementing the STAD model, with post-test scores surpassing pre-test scores at the .05 significance level. The students also expressed high levels of satisfaction across the three key areas: learning environment, instructional materials, and learning activities. These findings suggest that the STAD cooperative learning model effectively fosters reading comprehension and student engagement. It is recommended for broader application in similar educational contexts and further comparative studies.

Keywords: STAD model, Cooperative learning, Reading comprehension

Introduction

In the 21st century, rapid global changes necessitate the development of essential competencies such as critical thinking, collaboration, communication, and digital literacy (Phakon, 2014). Among these, English language proficiency has gained increased importance due to its role as a global medium of communication, particularly within ASEAN, where English serves as a lingua franca. The Thai government has accordingly emphasized English language education, mandating its inclusion from Grade 1 through Grade 12 in the national curriculum. (Ministry of Education, 2002). This curriculum emphasizes the four core language skills—listening, speaking, reading, and writing—to prepare students for academic and professional success.

of these skills, reading is a foundational component of language acquisition and academic achievement. It involves complex cognitive processes that require learners to construct meaning from written texts, often drawing on prior knowledge, vocabulary, and comprehension strategies (Whother & Kathleen, 2005). However, despite its importance, Thai students have persistently demonstrated low reading comprehension performance. According to Pumirat (1992), many Thai learners struggle with vocabulary and sentence structure, which impedes their ability to comprehend texts effectively.

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Reading comprehension, in particular, constitutes a foundational skill in language acquisition and academic success. It involves the complex interplay of decoding, vocabulary knowledge, inference-making, and the integration of background knowledge to construct coherent understanding from texts. Proficiency in reading not only underpins learners' performance across the curriculum but also facilitates independent learning and lifelong education. In the context of English as a foreign language (EFL), reading comprehension assumes an even more pivotal role, serving as a gateway for vocabulary development, syntactic awareness, and exposure to authentic language use. Given its far-reaching implications, fostering students' reading comprehension is both a pedagogical priority and a developmental imperative.

This issue is particularly evident at Ban Nong Khan School, where students have consistently underperformed on national standardized assessments. For example, Grade Six students' average scores in the Ordinary National Educational Test (O-NET) from 2017 to 2021 ranged from 22.50% to 36.50%, significantly below national benchmarks. A preliminary observation and teacher interview conducted in November 2021 identified several contributing factors: limited vocabulary knowledge, lack of reading strategies, inability to identify textual elements (e.g., plot, setting, characters), and the continued reliance on teacher-centered instructional methods. Students also reported low motivation and engagement in English reading classes, often due to unappealing materials and monotonous teaching practices.

To address these challenges, this study proposes the implementation of the Student Teams Achievement Divisions (STAD) cooperative learning model. Developed by Slavin (1995), STAD is a structured approach that promotes student collaboration, peer support, and individual accountability. It involves five key components: class presentation, team study, individual quizzes, improvement scoring, and team recognition. STAD has been shown to enhance not only academic achievement but also motivation, interpersonal skills, and learner autonomy. By integrating STAD with age-appropriate fairy tales, this study aims to foster reading comprehension in a more interactive, engaging, and student-centered learning environment.

Purpose of study

1. To investigate the effects of the STAD cooperative learning model on Sixth-Grade students' English reading comprehension.
2. To examine students' satisfaction with the STAD-based instructional approach.

Research Methodology

This study employed a quasi-experimental one-group pretest-posttest design to investigate the effectiveness of an instructional intervention grounded in the Student Teams Achievement Divisions (STAD) model integrated with investigative learning principles and fairy tale texts. The research was conducted in two primary phases:1) preparatory design and development of instructional materials; and 2) implementation of the instructional intervention and data collection.

The target population comprised 30 sixth-grade students enrolled at Ban Nong Khan School during the second semester of the 2022 academic year. These participants were selected through purposive sampling due to their identified need for enhanced reading comprehension skills. The instructional intervention spanned a six-week period and was operationalized through six comprehensive lesson plans incorporating the STAD cooperative learning technique, investigative learning tasks, and content based on fairy tales selected for their accessibility and motivational appeal to the age group.

The STAD model was operationalized as follows: students were placed into heterogeneous teams based on academic performance, with each group consisting of approximately five students. In each session, the teacher delivered a structured whole-class lesson (i.e., class presentation phase). Following the instructional input, students collaborated in their designated teams to engage with the reading materials, complete problem-solving tasks, and construct shared understandings (i.e., team study phase). Thereafter, individual assessments were administered to measure each student's comprehension independently (i.e., quiz phase). Individual improvement scores were computed by comparing posttest results to baseline pretest data. Finally, team recognition was conferred based on the aggregate performance improvement across team members, fostering accountability and mutual responsibility.

To determine the impact of the intervention, an English reading comprehension test consisting of a 20-item multiple-choice test was developed to assess English reading comprehension. The test items were derived from the content of the instructional texts (fairy tales) and aligned with cognitive domains including literal comprehension, inferencing, and vocabulary recognition. The instrument underwent content validation by three experts in English language education and educational measurement, yielding an Index of Item-Objective Congruence (IOC) ranging from 0.80 to 1.00. the Internal consistency was assessed using the Kuder-Richardson Formula 20 (KR-20), resulting in a reliability coefficient of 0.87, indicating high consistency.

Additionally, to evaluate students' affective responses and satisfaction with the instructional approach, a mixed-method data collection strategy was employed. This included a structured questionnaire consisted of 15 Likert-scale items across three domains: 1) learning environment, 2) instructional materials, and 3) collaborative activities. Content validation was conducted with an IOC range of 0.83–1.00. Cronbach's alpha coefficient was calculated at 0.91, indicating high reliability. And open-ended questions were used to collect student perceptions regarding instructional activities. These responses were analyzed thematically to identify recurring patterns in student experience.

Through the integration of STAD, investigative learning strategies, and age-appropriate literary texts, this study aimed to create an engaging, socially interactive learning context conducive to the development of reading comprehension among primary school learners. The instructional approach was grounded in Slavin's STAD cooperative learning model (1995), integrated with investigative learning principles and applied through three-phase reading instruction: pre-reading, during-reading, and post-reading. The procedure involved: Class Presentation, Team Study, Individual Quiz, Improvement Scoring, Team Recognition. This model was supported by Vygotsky's Zone of Proximal Development (ZPD), allowing more capable peers to scaffold learning for others.

Result

The findings of this study are presented in accordance with the two primary research objectives: 1) to determine the extent to which the STAD-based investigative learning approach, integrated with the use of fairy tales, improved Grade Six students' reading comprehension; and 2) to assess students' satisfaction with the instructional intervention.

1. Improvement in Reading Comprehension

Quantitative analysis revealed a statistically significant improvement in students' reading comprehension following the instructional intervention. The mean score on the pretest was 7.50, while the posttest mean increased substantially to 14.93. A paired-samples t-test confirmed that this difference was

statistically significant at the .05 level ($p < .001$) indicating that the STAD-based instructional model had a positive impact on students' reading comprehension.

All student participants exhibited gains in post-intervention performance, suggesting that the STAD cooperative learning structure, wherein students first engaged with the material in heterogeneous groups and subsequently completed individual assessments, successfully facilitated the consolidation and internalization of reading comprehension strategies.

2. Student Satisfaction with the Instructional Model

Learner satisfaction was evaluated through a structured questionnaire comprising items on three domains: 1) learning environment, 2) instructional materials, and 3) learning activities. The overall mean ratings for all domains fell within the "strongly agree" range, indicating high levels of student satisfaction.

Open-ended responses further substantiated the quantitative data. Thematic analysis revealed that students perceived the STAD-based classroom environment as collaborative, engaging, and supportive. They reported increased motivation and enjoyment, particularly as they were able to interact with peers in structured group settings, receive guidance, and assume active roles in problem-solving tasks. Learners also noted that the use of fairy tales as reading texts made the sessions more relatable and enjoyable, thus enhancing their willingness to participate and persist in reading tasks.

Additionally, the group-based approach to task completion-an essential component of the STAD model—was identified as a key factor in fostering peer support and positive interdependence. Students articulated that working collaboratively enabled them to gain confidence in interpreting texts and that team discussions supported the clarification of difficult vocabulary and ideas. Thematic analysis of open-ended responses yielded three core themes: Collaborative Engagement, such as *"I liked working in a team because friends helped me understand words I didn't know."*, *"It's easier to answer questions when we talk together."* Students emphasized how peer interaction improved comprehension and reduced anxiety. Increased Motivation and Enjoyment, such as *"I wanted to come to class because the stories were fun and I liked playing the team game."*, *"Learning with fairy tales made English not boring."* The narrative context of fairy tales made reading tasks more engaging and relatable. Confidence and Participation, such as *"Now I am not scared to answer because I know my group supports me."* *"I understand more and can explain stories to my friends."* Students gained self-efficacy and became more willing to participate in classroom activities.

Overall, the integration of the STAD model with investigative learning and literary content was effective in both improving reading comprehension and enhancing students' affective engagement with the learning process.

Conclusions

This study aimed to examine the effectiveness of an instructional intervention that combined the Student Teams Achievement Divisions (STAD) cooperative learning model with investigative learning strategies and the use of fairy tales as literary texts, in order to enhance Grade Six students' English reading comprehension. The findings provide compelling evidence that the integrated approach produced statistically and pedagogically significant gains in students' comprehension abilities and fostered a high level of learner satisfaction.

The implementation of STAD facilitated structured peer collaboration, in which students participated in heterogeneous teams to engage in purposeful reading activities and problem-solving tasks. This cooperative structure not only promoted individual accountability and team-based learning but also created opportunities

for learners to engage deeply with reading content. The inclusion of individual assessment and improvement scoring, core components of the STAD model, further reinforced learners' commitment to academic progress while ensuring that the contributions of each student were both recognized and valued.

The use of fairy tales, selected for their narrative familiarity and linguistic accessibility, effectively supported the instructional objectives. These literary texts provided a rich context for exploring reading strategies across the pre-reading, during-reading, and post-reading stages. Within this framework, investigative learning techniques—such as inquiry, discussion, and reflective sharing—enabled students to interact meaningfully with the material and to apply critical thinking and interpretive skills.

Student feedback, collected through both closed-ended and open-ended questionnaire items, indicated a strong sense of satisfaction with the learning environment, materials, and instructional activities. Learners consistently reported increased motivation, enjoyment, and engagement, which were attributed to the collaborative and active nature of the STAD-based instructional model.

In sum, the integration of STAD cooperative learning with investigative learning principles and contextually relevant literary materials proved to be an effective pedagogical approach for improving reading comprehension in the primary school context. This model not only addressed cognitive learning goals but also fostered social interaction, learner autonomy, and positive attitudes toward reading in English.

Summary for Conclusions Table:

Component	Summary
Intervention	STAD cooperative model + investigative learning + fairy tale texts
Outcomes	Statistically significant gains in reading comprehension
Mechanism	Peer collaboration, structured team tasks, and individual accountability
Learner Response	High satisfaction; improved motivation, engagement, and comprehension
Implication	Effective for both cognitive and affective learning outcomes

Discussion

The findings confirm that the STAD-based investigative learning approach significantly improved students' literal comprehension of English texts. This improvement can be attributed to the three core elements of the instructional model: active learning, problem-solving, and cooperative learning-all of which are foundational to the STAD framework.

1. Active Learning and Group Interaction

Throughout each lesson, students engaged in structured learning stages—pre-reading, during-reading, and post-reading—where they participated in small-group discussions, shared prior knowledge, and collaboratively analyzed textual content. The STAD framework enabled this interaction by forming heterogeneous teams in which students supported one another's comprehension. This aligns with research by Nuttall (1996), Moore (2010), and Galton (2009), which emphasizes that discussion in peer groups facilitates deeper comprehension by allowing learners to co-construct meaning. The influence of Vygotsky's Zone of Proximal Development (ZPD) was evident as more proficient readers provided scaffolding to their peers, leading to observable improvements in group and individual performance.

2. Problem-Solving in Collaborative Contexts

The investigative learning approach embedded within the STAD model promoted the development of metacognitive and problem-solving skills. During the reading process, students collaboratively addressed comprehension questions, identified key textual elements, and proposed interpretations. Rather than receiving

direct answers, learners were guided by the teacher through probing questions and indirect prompts. In the post-reading phase, students synthesized peer input and formulated individual responses. These practices are consistent with research by Ormrod (2006) and Slavin et al. (1989), which emphasizes that collaborative problem-solving enhances cognitive flexibility and strategy use.

3. Cooperative Learning via STAD

The use of STAD structures ensured both individual accountability and team-based motivation. Each student completed an individual comprehension task, the scores of which contributed to their team's cumulative performance. Group recognition was awarded to teams showing the greatest improvement, which incentivized all members to contribute meaningfully. This cooperative dynamic increased learner motivation and reinforced shared responsibility. The current findings corroborate studies by Saiyot and Saiyot (1995) and Resmi et al. (2013), which found that STAD effectively enhances reading achievement, particularly among students with initially low proficiency, by leveraging peer support and minimizing performance anxiety.

In summary, the fusion of STAD cooperative learning, investigative reading strategies, and literary texts cultivated an environment conducive to both cognitive development and affective engagement. The model empowered learners to construct meaning collaboratively while taking ownership of their individual progress.

Suggestions

To build upon the findings of this study, the following recommendations are proposed:

1. Future research should replicate this study across different educational levels and contexts to examine the applicability of the STAD-integrated investigative model.

2. Mixed-method designs that include classroom observation, teacher reflection journals, and student interviews could provide richer insights into the learning process.

3. Comparative studies should be conducted to evaluate the effectiveness of alternative cooperative learning strategies (e.g., Jigsaw, Team-Games-Tournament) relative to STAD.

4. Further studies may explore the impact of this instructional model on other language skills, such as writing, speaking, and listening, to determine its holistic efficacy in language development.

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