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Investigating Peer Assessment in Collaborative Writing Among Thai EFL Students: Effects on English Writing Ability

การศึกษาวิธีการสอนแบบประเมินโดยเพื่อนร่วมกับวิธีการเขียนแบบร่วมมือต่อความสามารถด้านการเขียนภาษาอังกฤษของนักเรียนไทย

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Abstract

This study investigated the effectiveness of peer assessment in a collaborative writing approach on English writing performance and examined students' opinions after receiving the treatment. A total of 36 high school students from a public school in Pathum Thani, Thailand, who enrolled in grade 11, were purposively selected as participants. This study used a mixed-methods approach with an experimental one-group pretest-posttest design. Quantitative data were collected through writing tests administered before and after the treatment, while qualitative data were gathered through a semi-structured interview conducted upon completion of the treatment. The statistical results showed a substantial rise in posttest mean scores compared to pretest mean scores, with an average increase of 3.50 and a 99% confidence interval spanning from 2.25 to 4.25. These results revealed that peer feedback, alongside collaborative writing, significantly improved students' writing capacity. The interview results showed that most students expressed positive opinions toward the treatment, emphasizing its effectiveness in enhancing English writing skills and providing ample opportunities for peer learning and scaffolding during writing lessons. Overall, the findings shed light on the potential of peer assessment in collaborative writing, showing that it significantly helps students compose writing tasks more systematically and chronologically. Students were also able to better understand and apply the linguistic features of paragraph writing, leading to improved writing quality. To further

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improve these outcomes, future research should ensure adequate time for feedback preparation and provide comprehensive training sessions on co-authoring.

Keywords: peer assessment, collaborative writing, EFL high school students in Thailand, writing performance

บทคัดย่อ

การศึกษาครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาวิธีการสอนแบบประเมินโดยเพื่อนร่วมกับ วิธีการสอนการเขียนแบบร่วมมือ และสำรวจความคิดเห็นของนักเรียนหลังจากได้รับการสอนตามแผนการทดลอง นักเรียนมัธยมศึกษาตอนปลาย จำนวน 36 คน จากโรงเรียนรัฐบาลในจังหวัดปทุมธานี ประเทศไทย ซึ่งเรียนอยู่ ชั้นมัธยมศึกษาปีที่ 5 คือกลุ่มตัวอย่างที่ถูกคัดเลือกแบบเจาะจง การศึกษาครั้งนี้ใช้วิธีการวิจัยแบบผสมผสานระหว่างวิจัยเชิงปริมานและเชิงคุณภาพ ต่อกลุ่มทดลองแบบกลุ่มเดียววัดผลก่อนและหลังการทดลอง ข้อมูลเชิงปริมาณถูกรวบรวมผ่านแบบทดสอบการเขียนก่อนและหลังการจัดกิจกรรมการเรียนการสอน ขณะที่ข้อมูลเชิงคุณภาพถูกรวบรวมผ่านการสัมภาษณ์แบบกึ่งโครงสร้างหลังจากสิ้นสุดการจัดกิจกรรมการเรียนการสอน ผลลัพธ์ของการวิเคราะห์ทางสถิติพบว่าคะแนนเฉลี่ยของแบบทดสอบหลังเรียนเพิ่มขึ้นอย่างมีนัยสำคัญเมื่อเทียบกับคะแนนเฉลี่ยแบบทดสอบก่อนเรียน โดยค่าเฉลี่ยการทดสอบหลังเรียนเพิ่มขึ้น 3.50 มีค่าความเชื่อมั่นที่ 99% ระหว่าง 2.25 ถึง 4.25 ผลลัพธ์ดังกล่าวแสดงให้เห็นว่า วิธีการสอนแบบประเมินโดยเพื่อน ร่วมกับวิธีการสอนการเขียนแบบร่วมมือ ช่วยพัฒนาทักษะการเขียนของนักเรียนอย่างมีนัยสำคัญ ผลลัพธ์จากการสัมภาษณ์พบว่า นักเรียนส่วนใหญ่มีความคิดเห็นเชิงบวกต่อวิธีการสอน และระบุถึงประสิทธิผลเชิงบวกของวิธีการสอนต่อการพัฒนาความสามารถในการเขียนเรียงความภาษาอังกฤษ เช่น โอกาสการเรียนรู้ การช่วยเหลือจากเพื่อน และเพิ่มพูนความสามารถการเขียนตามโครงสร้างที่เหมาะสม ผลลัพธ์การวิจัยแสดงให้เห็นถึงศักยภาพของการวิธีการสอนแบบประเมินโดยเพื่อนร่วมกับวิธีการสอนการเขียนแบบร่วมมือ ซึ่งสามารถช่วยให้นักเรียนเขียนเรียงความได้อย่างเป็นระเบียบและมีลำดับขั้นตอนอย่างมีนัยสำคัญ เมื่อนักเรียนเข้าใจไวยากรณ์หรือลักษณะของภาษา จึงสามารถประยุกต์ความรู้เหล่านี้ต่อการเขียนเรียงความ ซึ่งส่งผลดีต่อคุณภาพงานเขียน เพื่อส่งเสริมผลลัพธ์งานวิจัยในอนาคตให้ดียิ่งขึ้นไป ควรจัดสรรเวลาให้เพียงพอต่อการฝึกฝนการให้ข้อเสนอแนะและวิธีการเขียนแบบร่วมกัน

คำสำคัญ: การประเมินโดยเพื่อน การเขียนแบบร่วมมือ นักเรียนชั้นมัธยมศึกษาไทยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศ ความสามารถการเขียน

Introduction

English is considered significant for students, particularly high school students. In the context of global communication, proficiency in English writing is essential for both native and non-native speakers. For EFL (English as a Foreign Language) students, especially Thai EFL students, English plays a crucial function as a lingua franca to support the ongoing growth of the Fourth Industrial Revolution (Forman, 2016). Achieving accuracy and fluency in writing remains a challenge for EFL students due to the complexity of various writing aspects. Writing in English appears to be a multifaceted skill that requires not only mastery the mechanics of language use and forms, but also the ability to articulate thoughts coherently. Therefore, effective teaching methods,

along with rigorous revision and scaffolding practices, are essential for developing students' writing proficiency.

Statement of the Problems

In the context of this study, Thai high school students learn English as a compulsory subject under the national curriculum, which aims to develop their speaking, listening, and reading skills. However, writing appeared to be the most challenging skill for them, particularly when required to write essays in English. Previous English teachers have noted that students' essays often exhibit grammatical errors, incorrect tense usage, improper sentence structures, inappropriate verb choices, and punctuation mistakes, along with non-chronological or unorganized writing patterns. These mistakes significantly affect the quality of their writing and hinder their overall achievement in English, highlighting an urgent need for improvement.

To alleviate these problems, various teaching methodologies have been proposed in educational language teaching settings to help students improve their English writing skills. Feedback in the writing process has been widely acknowledged as a crucial role in supporting the students' learning, which led to language development in writing (Gielen & De Wever 2015; Hattie & Timperley, 2007). Traditional feedback mechanisms, which primarily rely on teacher corrections, often fail to engage students actively in the learning process. As an alternative, peer feedback, where students review each other's work, has gained attention for fostering collaborative learning and critical thinking. Similarly, peer review potentially increases students' awareness of their audience, enhances their social skills by helping them learn how to give and receive constructive feedback, justify their viewpoints, and critically evaluate suggestions (Topping, 2009). Peer review can boost motivation to write, improve writing effectiveness, and foster positive attitudes toward writing (Min, 2005). Additionally, peer feedback could reduce writing anxiety, increase student engagement and a more interactive learning environment.

However, peer feedback alone may be insufficient due to limitations in student interaction and learning engagement. While peer assessment facilitates collaborative communication, it is often more focused on oral discussions rather than structured writing development. Scholars in language teaching fields have claimed that collaborative writing, where students work as a team, has a significant positive impact on language learning, particularly in writing. Bueno-Alastuey and Martinez (2017) found that group collaboration on a shared topic or writing task significantly improves accuracy, fluency, and syntactic complexity. Similarly, Chen (2019), hodabakhshzadeh and Samadi (2017), and Zhang (2018) mark that collaborative writing promotes reflective thinking, particularly when paired with peer feedback. Engaging in collaborative writing encourages students to explain, exchange, and defend their ideas with peers, ultimately reducing writing anxiety. This may conclude that co-authoring or collaborative writing could be effectively integrated with peer review in writing class.

Enhancing peer feedback through collaborative and interactive writing activities could offer students with opportunities to develop their language skills (Mendonça & Johnson, 1994; Watanabe & Swain, 2007). Previous studies on peer assessment within collaborative writing contexts has revealed that such an approach improves students' accuracy, syntactic complexity, and overall writing performance (Bueno-Alastuey et al., 2022). Similarly, Damayanti, Abdurahman, and Wulandari (2020) observed that high school students effectively utilized Google Docs for collaborative writing and peer feedback, frequently using its chat and comment features for

brainstorming ideas, organizing text structure, and constructing sentences. Nonetheless, empirical studies on peer assessment alongside collaborative writing seem to be limited in Thai EFL high school settings, which can be seen as a critical research gap that needs to be further explored.

Therefore, implementing peer feedback in a collaborative writing approach could serve as an effective strategy for enhancing English writing proficiency. This approach not only helps students acquire essential knowledge in English writing, such as accuracy, syntactic complexity, and overall writing performance, but also fosters critical thinking, social skills, and increased motivation.

Research Questions

1. To what extent does peer feedback in the collaborative writing approach improve Thai high school students' writing performance in English?
2. What are students' opinions on the use of peer feedback in collaborative writing activities in English?

Hypothesis

Hypothesis testing is an essential process for validating assumptions and determining whether sufficient evidence supports the effectiveness of peer feedback in a collaborative writing treatment for improving Thai high school students' English writing performance.

1. H^0: There is no statistically significant difference in students' English writing mean scores between the pretest and the posttest after undergoing the treatment.
2. H^1: There is a statistically significant difference in students' English writing mean scores between the pretest and the posttest after undergoing the treatment.

Literature Review

1. Writing Struggles among EFL Students

Writing is a key productive skill that students must develop, as it reflects their ability to convey or transfer messages through written patterns. Hyland (2016) suggested that speaking is more contextualized, occurring within a shared situation, whereas writing involves generating ideas, contemplating how to articulate them effectively, and organizing these thoughts into coherent sentences and paragraphs (Nunan, 2003). Writing employs prose as a one-way form of communication. Students should be encouraged to write and produce writing tasks, as writing serves as an essential social skill and a means of communication in language acquisition (Lindemann, 1982). According to Onozawa (2010), writing involved several stages, including pre-writing, drafting, and revising. These stages also encompass thinking, planning, and evaluating. Engaging students in these processes is crucial for their writing development. However, merely providing a teacher's feedback seems to be insufficient to address the complexities of writing. Feedback is essential, but it should be integrated into a broader strategy for effective writing instruction.

EFL students often hesitate to fully engage in second language (L2) composition lessons due to limited English proficiency, which can result in low-quality writing tasks. A recent study by Mamarajabova and Bakhriddinova (2023) highlighted key challenges, including limited vocabulary, weak grammar and spelling, and insufficient exposure to reading materials. Many studies reveal the struggles EFL students face in writing. Solhi and Eginli (2020) argued that acquiring writing skills in a second language is more challenging than mastering other language

skills. Jacobs et al. (1981, as cited in Reid, 1993) noted that writing involves content, organization, vocabulary, language use (grammar), and mechanics. Widiawati and Cahyono (2001) asserted that teaching writing reinforces grammar, reading, and vocabulary for communicative purposes. Similar challenges have been observed among EFL Thai students, particularly in language use and functions, terminologies, and writing patterns, all of which need further improvement and development.

2. Peer Assessment

Traditionally, assessments have been used to evaluate and grade students, with instructors controlling the process by designing the assessments, grading performance, and providing feedback to improve learning and skills. In modern educational segments, however, students have taken on the role of feedback providers rather than relying solely on the teachers. This shift has become particularly prominent in language acquisition and has gained significant attention in second-language learning (Iwashita & Dao, 2021). Sitthiworachart and Joy (2004) defined peer assessment as a learning stage where students evaluate an assigned piece of work using a checklist or scoring rubrics. Lu and Law (2012) argued that good writing depends on the suggestions received from assessors or peers, as these are crucial to the learning process. Similarly, evaluating peers' work enables students to comprehend the assessment criteria, fostering an understanding of high performance, and encouraging them to modify their approaches to achieve desired outcomes (Ion, Marti, & Morell, 2019). This growing interest underscores feedback's ability to guide and enhance learning, particularly in writing development (Hattie & Timperly, 2007; Hu & Choo, 2016; Hyland & Hyland, 2006). Overall, these definitions highlight that peer feedback involves various active learning sessions, where students are encouraged to evaluate others' work in the language classroom and are provided with specific guidelines on how to deliver feedback during and after task completion.

Alternatively, peer assessment is also referred to as "peer feedback," "peer review," "peer evaluation," and "peer editing." In different contexts, it is generally agreed that peer assessment of writing involves using peers as sources of feedback and interactants. In this process, students engaged in peer learning by adopting roles and responsibilities typically held by instructors, trained writers, or editors. They provide feedback on drafts during the writing activities (Liu & Hansen, 2002; Yu & Lee, 2016). Significantly, peer assessment is predominantly viewed as comprising three types: Assessment for Learning (AfL), Assessment of Learning (AoL), and Assessment as Learning (AaL). Each type has a crucial role with different purposes in various language learning contexts.

3. Conceptualizing Peer Assessment Of, For and As Learning for Writing

Given the importance of peer assessment in writing lessons, the AfL, AoL and AaL can be conceptualized as displayed in Table 1 (adapted from Earl, 2013, and Lee, 2017).

Table 1

Assessment As, For, and Of Learning in Writing

Assessment	Focus	Orientation
Assessment as Learning (AaL)	Students at center	Formative
Assessment for Learning (AfL)	Writing as process	Formative
Assessment of Learning (AoL)	Writing as product	Summative

Table 1 illustrates the types of assessments in the writing lessons context. Briefly, AoL is primarily considered a form of measurement, based on the philosophical belief that knowledge exists independently of the students. According to this view, learners work hard to consume and acquire knowledge rather than construct it (Serafini, 2001). Conversely, AfL focuses more on writing practices and is mainly oriented toward formative orientation. According to Black et al. (2004), assessment tasks support language teaching when they provide information used as feedback by both instructors and learners, allowing them to evaluate themselves and each other and adjust their teaching and learning activities as needed. This kind of assessment is called "formative assessment", where the gathered information is used to adjust teaching in response to students' learning needs. However, AaL differs from both AfL and AoL in that it requires learners to recognize their strengths and weaknesses.

According to Lee (2007) and Schellekens et al. (2021), AaL refers to the process in which students set their own goals and monitor and regulate their writing progress using various strategies. Although the three approaches are distinctive in their learning and teaching roles, they all contribute to language acquisition.

Given the literature review above, this present study adopted the AfL model over AoL and AaL due to the nature of writing lessons, which require extensive feedback for improvement. AfL plays a vital role in the teaching and learning process by helping students become fully aware of their learning objectives and expected results. This approach offers students ample opportunities to practice and work toward their learning goals. Specifically, feedback plays a key role in the AfL approach (Yu, 2024), offering students with a productive learning experience by facilitating the generation and exchange constructive feedback. Importantly, this process occurs not only at the end of lessons but also consistently throughout the learning journey.

4. Peer Assessment for Learning in Writing in the Settings of Foreign Language Education

Peer assessment has significantly contributed to shaping students' writing performance. Recently, most studies in foreign language teaching have examined this process through the lens of the AfL approach. According to Tian (2011), collaborative writing can enhance the quality of students' writing in Chinese as a second language (L2) by encouraging them to support one another, correct mistakes, and merge their strengths in the target language. Similarly, Strobl (2014) provided insightful evidence that detailed discussions during the planning phase improved German L2 collaborative writing scores. Engaging in collaborative writing enabled students to reduce their writing pace during the negotiation process, which led to better writing performance in German.

These findings align with research in the EFL learning context, where peer review has been used as a treatment to improve English writing proficiency. Prompan and Piamsai (2024) noted that incorporating peer feedback and Self-Regulated Learning (SRL) instruction led to significant improvements in students' essay-writing skills and self-regulation capabilities. These findings emphasize the value and feasibility of incorporating interdisciplinary elements such as instruction, assessment, and sociocognitive theory into education to boost students' writing performance and support their lifelong learning development. Beyond improving EFL students' writing abilities, peer assessment also fosters positive perceptions and motivation following their participation in English writing lessons (Faggosa, 2015).

In summary, peer review has the potential to enhance students' writing performance and motivation by encouraging mutual assistance during writing tasks. Interestingly, Yu (2024) stated that collaborative writing approach can produce better learning outcomes when paired with peer review method, as noted that "peer feedback/revision involved in collaborative learning can greatly improve students' writing performance" (p.35). The literature review thus highlights the effectiveness of peer assessment in fostering English writing proficiency, especially when combined with a co-authoring approach.

5. Collaborative Learning in Writing Lessons

In the realm of sociocultural theory, researchers claim that students' engagement in group interactions, facilitated by peer assistance, can positively impact language learning outcomes (Chen et al., 2023). When students collaborate, they improve both their proficiency in the target language and their writing skills by discussing language options, expressing doubts, and offering suggestions (Storch, 2002; Swain & Lapkin, 1998). The collaborative writing method offers active learning opportunities, allowing students to complete assigned writing tasks collaboratively. They can brainstorm ideas and express different opinions in pairs or groups writing tasks. Similarly, peer feedback fosters learning by allowing students to explore language choices, identify writing errors, and receive suggestions from their peers. This collaborative process encourages students to both offer and accept feedback, promoting deeper engagement with their writing. Moreover, it is a learning stage where students can learn from one another by interacting and offering feedback in groups, which enables them to construct meaning and delve further in the process of knowledge building (Wu, 2007). These supports help them to integrate new insights into their established frameworks and present them in a meaningful way.

Previous studies in the EFL writing context reveal that collaborative writing has a positive impact on writing skills. Wu (2007) compared different group compositions in problem-based learning (PBL) lessons for EFL writing among 60 students. Groups with similar levels of writing competence outperformed those with randomly mixed proficiency levels in bi-monthly online assessments. Concurrently, Snyder et al. (2016) pointed out that the collaborative writing approach slows students' writing pace, which enables them to reflect on their ideas and ultimately improve their writing. For Thai students, collaborative writing has been shown to enhance writing performance and foster a positive attitude toward writing lessons (Wonglakorn & Deerajviset, 2023).

To recapitulate, both peer review and collaborative writing share effective learning aspects, including learning interactions, idea exchange, brainstorming, and task revision during the writing process. Practically, students are allocated time to examine writing tasks, analyze

them, and provide feedback during peer review. Meanwhile, collaborative writing encourages students to work as a team, and gain insights from their peers. This suggests that both approaches are practical and effective in fostering EFL Thai students' English writing performance and motivation throughout the learning process.

6. Previous Studies Concerning Peer Feedback Alongside Collaborative Writing

Previous studies indicate that combining peer assessment with group learning is effective in writing lessons. Most researchers argue that collaborative writing, paired with peer feedback has potential benefits in L2 writing classes. McDonough et al. (2021) explored how L2 French learners' views on peer interaction influenced their conversational behaviors in interactive writing classes. These classes involved peer interactions during the planning, revision, and collaborative writing stages. The results suggest that teachers should be encouraged to utilize interactive writing tasks. Likewise, Alshuraidah and Storch (2019) noted the benefits of a group writing-to-peer review activity. Their study compared feedback provided by adult EFL students in Saudi Arabia, both collaboratively and individually. The findings revealed that students provided more feedback and offered more helpful remarks in a collaborative setting. Additionally, most students felt more comfortable giving feedback in pairs. An investigation into how collaborative writing and peer feedback affect writing performance in Spanish as a foreign language showed that both treatments led to improvements. However, peer feedback was more beneficial in increasing sentence complexity, fluency, and overall quality, while collaborative writing resulted in more accurate texts (Bueno-Alastuey et al., 2022). These studies suggest that combining collaborative writing with peer feedback can enhance writing performance and offer better language learning opportunities in composition lessons.

The existing literature review highlights a research gap. While many studies have examined the effects of the treatment within university student communities, there are limited studies on EFL high school students, particularly in the Thai high school context, where English is a compulsory subject. This research gap represents a significant opportunity for further exploration, which is the focus of the present study. The main goal of this study is to investigate the effectiveness of peer feedback combined with the collaborative writing approach in enhancing Thai high school students' writing performance in English. Additionally, the study aims to explore the students' opinions of how peer feedback supports the collaborative writing approach in writing classes.

Research Methodology

1. Research Design

This study used a mixed method within a pre-experimental research framework, specifically using an intact group pretest and posttest design. The primary aim was to investigate the effectiveness of peer assessment for learning, combined with collaborative writing, on students' writing performance and to explore their opinions after undergoing the treatment. This method is commonly employed across various research fields, including clinical healthcare, educational services, social integrity projects, and program evaluation (Gil & Kim, 2022; Son, 2021). Quantitative data were gathered through a pre-writing test and a post-writing test. Meanwhile, qualitative data were collected via a semi-structured interview conducted at the end of the

research phase to gain deeper insights into students' experiences with the peer assessment and collaborative writing treatment.

2. Participants

The participants in this study were selected through purposive sampling, based on specific criteria outlined in Table 2.

Table 2

Demographic Information of the Participants

Demographic variable	Category	Frequency (N)	Percentage
Gender	Male	26	72.22%
	Female	10	27.78%
Age	15 years old	18	50.00%
	16 years old	18	50.00%
Program type	Regular program	36	100%
Grade level	Grade 11	36	100%

Table 2 presents the demographics of the participants in this study. The 36 students, aged between 15 and 16 years, in grade 11, were enrolled in the regular program, where English is a compulsory course. These participants were purposively selected from a single class in the same section to ensure consistency in the educational environment. As the participants used both English and Thai during the English writing lesson, their English proficiency may vary.

3. Ethical Considerations

Before implementing the study, thorough ethical considerations were made to ensure the protection of participants' rights and privacy. The students were provided with informed consent and were fully briefed on the research process. Notably, they were informed that they could withdraw from the study at any time, and all the collected data were kept confidential and securely stored.

4. Research setting

This study was conducted at a public high school in Pathum Thani province, Thailand, which was chosen based on its characteristics that aligned with the study's objectives. The school was purposively chosen to represent a typical English as a Foreign Language (EFL) learning environment within the Thai education system. As English is taught as a compulsory foreign language in this setting, it offers an ideal context for exploring various English proficiency levels and assessing the impact of teaching interventions in a standard educational setting.

5. Research Instruments

Two major research instruments used in this study were a pre-writing test and a post-writing test, designed to assess high school students' writing abilities. Moreover, a semi-structured interview protocol was used to explore their overall opinions. Additional details are provided below:

5.1 Pre-Writing Test and Post-Writing Test for Assessing Writing Performance

The writing test utilized in this study required students to write an expository essay entitled *"What is technology? How does technology promote English language learning?"* Students were required to compose four paragraphs of approximately 250 words, with a 60-minute time limit. Both the pre-test and post-test were identical in assessing the students' overall English writing skills. The test was scrutinized and revised by three experts in English language teaching.

Before implementation, the tests were piloted with 34 high school students from a different section of grade 11. After scoring the pilot tests using a scoring rubric, the difficulty and discrimination indices were calculated using the "Research Tools Analysis Program" (RTAP), which was developed by the Faculty of Education at Mahasarakham University. As a result, the difficulty index ranged from 0.52 to 0.64, while the discrimination index ranged from 0.20 to 0.29, indicating an acceptable level of test quality.

Subsequently, Cronbach's Alpha Coefficient (1998) was analyzed based on the difficulty and discrimination indices. that determine the reliability of the writing test, ensuring its consistency and dependability. Authors reporting studies and readers evaluating them are provided with guidance on employing Cronbach's alpha to validate the instrument's quality (Taber, 2018). As a result, the reliability of the test was 0.84, indicating an acceptable value. This is relatable to Bathgate et al. (2015), who explained that they developed a tool to assess students' skills in constructing effective scientific arguments and found that the instrument manifested an acceptable range of reliability, with a Cronbach's alpha of 0.77. Based on this, it can be concluded that the writing tests were reliable.

5.2 Scoring Rubric for Pre-Writing Test and Post-Writing Test Assessment

The scoring rubric was adapted from Andrade (1997) to assess students' overall writing performance. High inter-rater reliability values indicate strong consensus between two evaluators (Lange, 2011). To increase the internal validity of the results, the tests were scored by two inter-raters in the field of English language education. The scoring aspects were categorized into four core aspects: structure, grammar, terminology, and content. Each aspect was rated on four-point scale. Essentially, the scoring rubric was evaluated by three experts, who used the Items-Objective Congruence (IOC) method to measure the validity of the rubric. The resulting IOC value of 0.84 indicated an acceptable level of validity.

5.3 Peer Assessment Rubric

The peer assessment rubric was introduced to the students at the beginning of the writing intervention to ensure they understood the assessment criteria. The students utilized the rubric at three key stages of the writing process: before writing to guide planning, during drafting to monitor progress, and after receiving peer feedback to refine and revise their work. Each writing task went through two rounds of revision: an initial peer review followed by a teacher-guided revision. Peer feedback was incorporated immediately after the first draft, where students were paired to exchange feedback based on rubric guidelines. The second round of revision occurred after the teacher provided additional feedback based on peers' suggestions.

Collaboration between peers occurred during both the initial drafting phase, where students could brainstorm together, and during the revision phase when they could address issues identified through peer and teacher feedback. Initially, students focused more on correcting grammatical errors, but over time, they became more receptive to content-based feedback. This shift was observed in the second round of revisions, when students paid more attention to improving the clarity of their arguments and the logical flow of their ideas.

5.4 Course Plans Designed under Peer Feedback Coupled with Collaborative Writing

The course plans, designed to enhance Thai high school students' English writing performance, consisted of two-hour lessons. Prior to the study's implementation, the lesson plans were reviewed by three experts in English language teaching, resulting in an acceptable level of IOC exceeding 0.84-1.00. Each lesson was designed to achieve specific learning objectives, such as mastering language use, understanding paragraph structures, improving grammar and vocabulary, and developing thesis statements and supporting arguments. These topics provided students with the fundamental knowledge needed to complete writing tasks.

After delivering each lesson and completing co-authoring activities, peer feedback was incorporated to refine the assigned writing tasks. At the end of each lesson, the teacher summarized common mistakes made by students and briefly reviewed the key points of the lessons. Each round of revision emphasized different aspects of the writing process. In the first revision, students primarily focused on addressing structural and content-related feedback from peers. The second revision, guided by teacher feedback, concentrated on refining language mechanics, ensuring grammatical accuracy, and improving overall coherence.

5.5 Semi-Structured Interview

Before administering the semi-structured interview, the four interview questions were reviewed by three experts in the field of English language teaching using the IOC form to confirm their validity. As a result, the four interview questions, designed to explore the participants' overall opinions at the end of the research phase, exhibited an acceptable validity range of 0.94-1.00. To gain deeper insights, eight students from the samples were selected through purposive sampling, considering their ability to respond to the questions, English proficiency, and willingness to engage in discussion (Cheng & Zhang, 2024). A face-to-face interview method was employed to examine their overall opinions. During the interview process, students were allowed to answer either in Thai or English. The interview sessions were audio-recorded, transcribed, and the Thai responses were translated into English. The translated data were then organized and analyzed using content analysis (CA) as a reflective process (Erlingsson & Brysiewicz, 2017).

To ensure the reliability of the qualitative content analysis, the data were coded independently by two researchers. An initial codebook was developed based on recurring themes identified from student interviews and feedback on peer assessment sessions. Each researcher coded the data separately, and the codes were then compared for consistency. Any discrepancies were resolved through consensus discussion. To further ensure reliability, Cohen's Kappa (1960) was used to calculate the inter-rater reliability to measure the degree of agreement between the two experts in English language teaching. Then, the interview results were categorized into themes such as collaboration effectiveness, feedback clarity, and student

reflections on the writing process, which were used to interpret the findings concerning peer assessment's impact on writing performance.

Data Collection

This research was conducted at a government high school in Pathum Thani province, Thailand, during the first semester of the 2024 school year, spanning ten weeks. Prior to commencing the data collection, approval was obtained from the school administrator. To prepare the students for their role as feedback providers, a training session was commenced.

1. Feedback Providers Training in the Collaborative Writing Session

Before the training session, each student was required to complete a pre-writing test in the first week. Following the test, the students entered the preparation phase. Without proper training and guidance in providing feedback, students might be confused about their roles. According to Cheng and Zhang (2024), this preparatory session, known as the pre-feedback stage, is intended to enhance the students' ability to deliver constructive feedback after completing writing tasks. In this study, students provided feedback to one another using both written and oral feedback formats, and they were allowed to use their native language in performing peer assessment.

The students were thoroughly trained to use a writing rubric for assessing their peers' writing tasks, and they were encouraged to review and comment on each other's work (Lam, 2010). Significantly, the teacher introduced the main areas of feedback, such as linguistic features and language use in paragraph writing. These processes aimed to improve the students' ability to provide constructive comments on their peers' writing.

To incorporate peer feedback with collaborative writing, the students were assigned group activities for completing writing tasks. Peer reviews played a major role in facilitating the exchange of feedback after each assigned writing task. The core of peer assessment was based on a formative approach, incorporated throughout each learning session. Details of the data collection procedure are visualized in Table 3.

Table 3

Data Collection Procedures

Duration	Learning topics	Procedures
Weeks 1-2	Pre-writing test Feedback provider in collaborative writing preparation session	
Weeks 3 - 8	Introduction to paragraph writing Basic grammar for writing Language use for writing Introduction and thesis statement Body in paragraph writing Supporting ideas for writing	Group writing tasks (Collaborative writing) Written & oral feedback (Peer Assessment) Revised drafts of writing tasks
Weeks 9-10	Post-writing test Semi-structured administration	

During weeks 3 to 8, students were grouped to complete writing tasks as part of the learning process. Each group was required to submit two drafts for each writing task. The students began with the first draft in collaborative writing. Emphasis was placed on collaboration, where students shared ideas, planned, and constructed their first writing tasks collectively. Then, they participated in guided peer reviews, using a rubric to provide structured and constructive feedback. Oral discussions also took place to refine their writing collectively.

After incorporating the peer feedback session in team writing activities, students submitted a revised first draft as preparation for the second draft, which was then reviewed by the teacher. The teacher identified common mistakes, provided feedback, and suggested improvements for the second draft. Next, each group was assigned to revise their drafts through the team writing method once again, after the teacher had reviewed major language use and forms. In this phase, students were encouraged to exchange ideas, discuss their revisions, and reflect on their writing before submitting the final drafts. The goal of the second draft session was to deepen students' understanding of the writing process, enhance their awareness of language use and forms, and promote their overall English writing skills.

Once the learning process was completed, each student was required to take a posttest, which had the topic as the pretest. Afterward, students were selected to participate in a semi-structured interview to share their perspectives and experiences after undergoing the English writing lessons.

Data Analysis

After completing the data collection process, both qualitative and quantitative data were analyzed. The quantitative data gained from the pre- and post-writing tests were evaluated using a scoring rubric. Then, the numerical data from both tests were analyzed using descriptive statistics, including mean score (M) and standard deviation (S.D.). To test the study's hypotheses, inferential statistics were conducted, including a paired-samples t-test and effect size measurement based on Cohen's (1998) guidelines.

Meanwhile, the qualitative data were gathered from the semi-structured interviews. The interview responses were transcribed, translated into Thai, and analyzed using content analysis (CA) to interpret students' perspectives and experiences.

Results

1. Quantitative Results

This research mainly aimed to evaluate the effectiveness of integrating peer feedback with a collaborative writing approach. The first research question was addressed using descriptive and inferential statistical analyses to compare pre-writing and post-writing scores. The results are presented in Tables 4 and 5 below.

Table 4

Descriptive Statistics

		N	M	SD	Std. Error Mean
Paired 1	Pretest	36	7.25	1.74	.29
	Posttest	36	10.75	1.90	.31

Table 5

Inferential Statistics

Pair 1	Pretest - Posttest	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig.
					Lower	Upper			
		3.50	2.23	.37	4.25	2.74	9.39	35	.000*

The descriptive statistical analysis presented in Tables 4 and 5 shows that the mean score (M) of the pre-writing test was 7.25, with a standard deviation (S.D) of 1.74. In contrast, the post-writing test showed a higher mean score (M) of 10.75, with a standard deviation (S.D) of 1.90.

To further assess the effectiveness of the treatment, inferential statistical analysis was conducted. The results revealed a significant improvement from the pretest (M = 7.25, SD = 1.74) to the posttest (M = 10.75, SD = 1.90), t (35) = -9.39, p = 0.00 (two-tailed). The mean score increase was 3.50, accompanied by a 99% confidence interval ranging from 2.25 to 4.25.

1.1 Effect Size of Peer Assessment as Collaborative Writing in EFL Thai High School Students

To determine the practical significance of the results in the experimental research, the effect size was calculated to assess the magnitude of the observed effect (Lakens, 2013). Based on Cohen's (1998) guidelines for value interpretation: 0.01 = small effect, 0.06 = moderate effect, 0.14 = large effect, the result of the effect size was 0.71, which indicated a large effect of the treatment.

1.2 Deciding Hypotheses

The null hypothesis (H^0) states that no significant effects, relationships, or differences exist, while the alternative hypothesis (H^1) indicates the presence of significant results. The p-value holds potential to determine the confidence level when deciding whether to reject the null hypothesis (Yarandi, 1996). The results of the paired-samples t-test support the decision to reject the null hypothesis and accept the alternative hypothesis. Because the results from the paired samples t-test manifested a significant difference at >.05 of p-value, the findings show that the given treatment was effective in significantly improving and strengthening students' English writing performance.

2. Qualitative Results

At the end of the research phase, a semi-structured interview was conducted to explore students' overall opinions on the treatment. In adherence to research ethics, the confidentiality of students was designated as Student 1, Student 2, Student 3, and so on. During the interview sessions, students were encouraged to respond verbally in the language they felt most comfortable with. Therefore, the qualitative findings from the interview with eight students are presented below.

2.1 The Benefits of Peer Feedback Coupled with Collaborative Writing

The first question was designed to gather the positive effects of incorporating peer feedback into collaborative writing tasks in writing classes. Most students expressed that peer assessment in collaborative writing positively influenced their learning process, specifically in understanding writing contexts. They highlighted that engaging in peer feedback allowed them to recognize each other's strengths and weaknesses, ultimately refining their writing skills. In

addition, they specified that the treatment provided them with a learning stage where they could discuss and exchange ideas with their peers, which could lead to a better understanding of the topic. This is reflected in the following statements.

> "I would say that peer feedback enhances our understanding by providing opportunities to verify our answers, exchange ideas, and reflect on our own work" (Students 1, 4, and 5).

> "I thought that peer feedback fosters collaboration among students, encouraging us to share ideas, respect diverse perspectives, and identify errors in their writing, leading to paragraph improvement. This collaborative process deepens their comprehension of the material and raises the quality of their work" (Student, 3).

2.2 Components of Peer Feedback Supported with Collaborative Writing Assisted Students in Performing Writing Tasks

The second question explored the main components of the treatment that helped students perform writing tasks in the target language. Most students pointed out that both providing and receiving feedback within groups enhanced their understanding of grammar, sentence structure, critical thinking, and communication skills. Additionally, writing in groups allowed them to learn from each other's writing styles and develop their unique voices.

In summary, peer feedback facilitated the improvement of writing quality by refining sentence structure, paragraph organization, and overall accuracy. The collaborative process allowed students to efficiently identify and correct errors, resulting in better-structured and more detailed writing. The following excerpts provide further insights.

> "Peer feedback as collaborative writing assisted us in improving sentence structure and paragraph organization. By receiving feedback from peers, we can quickly identify and rectify errors in their writing, thus saving time and increasing their efficiency" (Students 2, 6, and 7).

> "I thought that collaborative writing and peer feedback enable us to develop more detailed and accurate writing by encouraging them to visualize their ideas and adhere to grammatical rules" (Student 3).

2.3 Difficulties in Achieving Writing Tasks through the Lens of Feedback Coupled with Collaborative Writing

The third question examined the challenges students encountered while participating in this study. Many students expressed reluctance in providing negative feedback to their peers. Additionally, differences in proficiency levels sometimes made it difficult for students to fully understand each other's writing. Furthermore, some reported a lack of confidence in providing peer feedback due to their limited knowledge. These challenges may have led to insufficient revisions and affected the accuracy and grammatical quality of their writing. Further details are revealed in the excerpts below.

> "One of the challenges I had when I did peer feedback in group writing activities was that I lacked the necessary knowledge or skills to provide effective feedback to my peers" (Students 1, 3, and 4).

> "One challenge I faced when engaging in peer feedback was finding the appropriate vocabulary to express their ideas, as I frequently was not certain in my feedback" (Students 8 and 7).

2.4 Recommendations on the Utilization of Feedback Coupled with Collaborative Writing in Language Class

The last inquiry aimed to gather students' suggestions for improving the implementation of peer feedback and collaborative writing in language classrooms. Overall, students highlighted the importance of allocating sufficient time for practicing peer feedback in team writing activities to enhance its effectiveness. Additionally, they suggested that providing clear explanations of learning topics in their native language could enhance their understanding and engagement in the writing process. These suggestions are illustrated in the excerpts below.

> "Providing concise and clear summaries in both the target language and our native language can help reinforce learning and improve comprehension" (Students 5 and 10)

> "I thought that offering more opportunities for us to practice delivering feedback could help us develop accurate messages for peer assessment" (Student 1).

In summary, the overall qualitative data revealed that the treatment can be a valuable approach for enhancing students' English writing performance. Students consistently highlighted the benefits of peer feedback in enhancing their writing skills. Collaborative writing, facilitated by peer feedback, was perceived as crucial for improving sentence structure, paragraph organization, and overall writing quality. Students valued the opportunity to exchange ideas, identify errors, and receive constructive feedback. However, they also faced challenges such as limited vocabulary and difficulties in providing effective feedback. The students suggested that providing clear guidelines, ample practice, and sufficient time for feedback exchanges could further optimize the peer feedback process.

2.5 Interrater Reliability

After translating and interpreting the qualitative data, Cohen's Kappa (1960) was used to assess the degree of agreement between the two raters. Consequently, the result of 0.84 indicated a strong degree of reliability. According to Cohen's (1960) interpretation, this suggests that the qualitative was reliable.

3. Summary of the Findings

In light of the significant improvement in students' English writing performance, the large effect size of the treatment's potential, and the acceptance of the alternative hypothesis, it can be concluded that the combination of peer review and collaborative writing effectively improves students' ability to write in English. A comparison between the first and final writing products is presented below.

Figure 1

The Comparison between the First and Final English Writing Products Written by EFL Thai High School Students

Technology is revolutionizing education and learning gronble, particular learnning in the feld of language. it had enhanced. Technology is feature and new thing that amazing for learning language. Example for, learnning English chines korea or everything language.

Technology is good for learnning language. Technology can help you everything. It very so good.

Technology is so good but Technology is have bad. It not can help you everythig. It cut couture and nature.

Technology is so good and bad. We know can do it for good. Howevery, We love Technology beacuse is so amazing and good for us and world.

(First product)

Nowadays, the technology has became important aspects of our lives. And It can make our life easier, along with the learning english. because english is so importent now. People have to known english, because It is a main langues that people around the wold use. Flowing reason

Firstly, It is about the communication. people also talk with others, and also meet the new society in everytimes, they growup. So learning how to talk another langues is so much importent. English is a best way to learn, because It main langues. You can learn It from teacher or learn It by yourself. For example, I recommand you these applications, It googletranslete this app will help you for reading, taking, and find the vocabulary that you dos'nt known.

Secondly, how to understand english. this have a lot of ways to solve problem. But for me, It's too much easily than talking. because you just has to listen something in english you liked. For example, movie or animation or podcast or song. this kind of technology is will help you, you will ever boring about this. I prefer.

In conclusion, the technology will help you to learn english easier. You just have to use It in the way you are..., But not for the way to ruin you life. You english skills will be better.

(Final product)

Figure 1 illustrates the improvement in student's English writing performance, which was significantly enhanced by positive effects of the treatment. Accordingly, the interview results further supported the treatment's effectiveness, as it offered a myriad of active and practical learning stages. Most students expressed positive viewpoints concerning the treatment in their English writing lessons, focusing on the benefits of brainstorming and exchanging ideas during team writing activities and participating in peer feedback sessions. These activities provided diverse insights from peers, which helped improve assigned writing tasks and contributed to a better understanding of language use, forms, functions, and English writing structures.

However, some students raised concerns, such as limited English proficiency and a lack of confidence in delivering feedback during the learning process. These challenges may hinder the effectiveness of collaborative learning and limit some students' ability to fully benefit from peer interactions in collaborative writing. To address these problems, it is recommended that additional support be provided to enhance students' English proficiency and build their confidence in providing constructive feedback. This may include targeted language workshops, confidence-building exercises, and structured training on effective feedback techniques. Overall, the study highlights the positive impact of collaborative writing and peer feedback on Thai high school students' English writing skills, while also identifying areas for further improvement to maximize the benefits for all participants.

Discussion and Conclusion

The integration of peer assessment and collaborative writing in writing lessons resulted in significant growth in students' mean scores, with most students expressing positive opinions about the treatment. This suggests that the treatment had a great impact on high school students' writing performance. To shed light on the impact of the peer assessment for learning approach, combined with collaborative writing, on enhancing EFL high school students' writing skills, this section is divided into two aspects: peer assessment for learning in writing lessons and the combination of peer assessment with the collaborative writing method, as described below.

1. Peer Assessment for Learning in Writing Lessons

This study mainly investigated the effectiveness of the peer assessment for learning method in supporting collaborative writing to enhance Thai high school students' writing performance. The analyzed statistical data confirmed that the treatment significantly improved students' English writing abilities by providing plenty of opportunities and scaffolding for improvement. Furthermore, peer feedback during lessons helped students develop a more comprehensive understanding of systematic and chronological patterns, particularly in terms of linguistic features in paragraph writing because it played a formative role. In other words, students were frequently engaged in peer feedback, reflections on the taught lessons, and evaluations of completed writing tasks. These supports align with Yu (2024), who states that the AfL approach fosters productive experiences and positively impacts students' learning opportunities in developing a particular skill.

The rubric used during the written peer review session emphasized both language and content quality. Language mechanics focused on grammar, spelling, and punctuation, while content quality assessed the organization of ideas, coherence, argument development, and critical thinking. Students were encouraged not only to correct surface-level errors but also to evaluate how well they conveyed their ideas. This approach ensured that students were developing both their technical writing skills and their ability to produce meaningful, well-structured academic arguments. The rubric's criteria for content were designed to assess the clarity of ideas, logical structure of paragraphs, and the effectiveness of transitions between points.

Most empirical studies have concentrated on examining the effectiveness of peer assessment or feedback in enhancing EFL students' writing performance, and their findings have empirically manifested a positive effect on students' English composition abilities. This study echoes the results of Almahasneh and Abdul-Hamid (2019), who examined the impact of peer assessment on the writing abilities of 120 Arab EFL secondary school students, aged fifteen to sixteen, in Malaysia. Their findings revealed significant improvements in students' writing quality after they experimented with the treatment. Similarly, Berggren (2015, 2019) conducted two intervention studies with Swedish junior EFL high school students and found that providing peer feedback enhanced their writing performance. These studies shed light on the effectiveness of feedback reviews in not only raising participants' awareness of their audience and genre but also encouraging further revisions. Students were also able to transfer their ideas by linking in their first drafts to the peer feedback received. In the Thai context, Prasobdee (2021) found that after experiencing peer assessment in grade 7, Thai students showed significant improvement in text organization, vocabulary use, and tenses. Notably, students reported that peer review facilitated their writing development.

Based on the findings of previous studies, as well as the quantitative and qualitative results of this study, it can be concluded that peer feedback has the potential to improve students' writing, specifically concerning foreign language learning. This approach provides students ample opportunities to exchange ideas, brainstorm sessions, and self-correction, which could contribute to language improvement. These activities can foster positive learning outcomes in a writing course.

2. Combination of Peer Assessment and Collaborative Writing in Writing Lessons

Collaborative writing refers to the co-authoring of writing tasks. In the educational context, it has been utilized to assist students' English writing abilities while encouraging group brainstorming. This study applied the collaborative writing method to enhance peer review, aiming to improve Thai high school students' English writing performance, as suggested by Yu (2024). Similarly, incorporating peer review into writing lessons engages students in collaborative writing (Storch, 2019). Moreover, feedback given during collaborative writing shares similarities with feedback from peer-response activities, especially when participants are well-trained and follow clear guidelines (Yu & Lee, 2016). Such feedback not only addresses minor errors but also covers all elements of writing and is understandable to the recipient. This implies that combining both methods enhance writing performance.

To ensure the statements above, prior studies on collaborative writing (Niu, 2009; Storch, 2002, 2005; Swain & Lapkin, 1998) reported that during the co-authoring process, learners discuss various aspects of their work. They exchange feedback on interpreting task requirements, incorporating ideas, organizing and connecting those ideas, and expressing them effectively. This process shows that both the act of co-authoring and the function of feedback can mediate students' thinking, improving their language learning, including beneficially affecting their composition skills.

In the Thai EFL context, the integration of peer assessment with the collaborative writing in writing lessons is limited. Nevertheless, Storch (2019) claimed that peer feedback during collaborative writing activities provides L2 learners with more chances for language acquisition and writing improvement in L2 than cooperative writing or individual writing followed by peer-response activities. This claim aligns with the findings of Li and Zhu (2013), who studied intermediate Chinese EFL college students. These students discussed their ideas on a discussion page before or during the writing process and justified changes they made in the text. In two of the three triads, learners developed collaborative relationships and were highly engaged. They not only revised each other's texts but also discussed all aspects of the writing, including language. Furthermore, Damayanti et al. (2020) found that Google Docs facilitated group writing among high school students, supporting idea generation, text organization, and sentence construction. Peer feedback was actively exchanged during the collaborative process.

Although previous studies in the Thai learning context have been limited in confirming these findings, several studies involving EFL high school students have affirmed the potential of combining peer assessment and collaborative writing techniques. Essentially, these studies demonstrate a clear relationship between the co-functioning approaches and improved accuracy in composition assignments. The study by Bueno-Alastuey et al. (2022) supports the functions and positive effects of peer feedback combined with collaborative writing in EFL learning contexts.

The integration of both approaches helped students improve their writing outcomes and enhance their ability to use linguistic features, ultimately increasing English writing accuracy.

The findings of this study align with the previous research outcomes, showing various helpful aspects. Collaboration in writing assignments can effectively foster self-awareness regarding writing errors. After implementing peer review, the teacher provides confirmation and correction of the writing tasks, which encourages students to reflect independently and share their insights with peers. This reflective process encourages independent thinking and the transfer of knowledge to peers. Beyond the learning achievement, students are encouraged to engage in both collaborative and individual writing tasks; these may promote active learning, student-centeredness, and greater self-confidence in providing feedback and working as a team.

3. Conclusion

This study investigated the effectiveness of peer assessment, combined with the role of collaborative writing, in improving English writing performance among Thai high school EFL students. Regarding the first research question, the statistical findings revealed a significant improvement in students' writing abilities, as reflected in the higher mean scores from the pretest to the posttest. The statistical analysis also demonstrated a substantial effect size, confirming the practical significance of the treatment. The quantitative data implies that peer feedback, as part of collaborative writing, positively impacts EFL Thai high school students' writing performance for several reasons. Students with low English proficiency may benefit from peer feedback in enhancing their writing comprehension. Students may feel at ease in working with one another to achieve written tasks. Co-authoring activities may encourage them to express their ideas and opinions; this learning stage may serve as one of the integral parts of fostering negotiation skills and boost students' confidence. Additionally, qualitative data from the interview sessions highlighted the positive impact of peer feedback on writing skills, collaboration, sentence structure, and paragraph organization. Despite some challenges, such as limited vocabulary and difficulties in providing effective feedback, were identified, the students recognized the value of the collaborative process and suggested ways to optimize the peer feedback approach.

4. Pedagogical Implications

The findings of this study shed light on myriad implications for educators and practitioners in language teaching. The integration of peer feedback within collaborative writing tasks proves highly beneficial for students' writing development. The collaborative nature of these activities allows students to engage more deeply in the writing process, both offering and receiving feedback that enhances their linguistic and cognitive skills. By working together, students can identify gaps in their writing and refine their arguments more effectively. Likewise, the structured use of a peer assessment rubric ensures that students focus on both content quality and language mechanics, promoting a more holistic approach to writing development. Along the same lines, the collaboration process in peer review helps foster essential language abilities, including language proficiency, critical thinking, and problem-solving skills that are essential for academic success in EFL learning contexts.

While the results provide valuable insights into the benefits of collaborative writing and peer feedback for Grade 11 students in a public high school in Pathum Thani province, the findings may also have relevance for English writing lessons in other high schools where

students use both English and Thai. Nonetheless, the generalizability of these results to other Thai high schools is limited by several factors, such as cultural attitudes toward collaboration, regional differences in educational practices, and institutional characteristics like resources, class size, curriculum design, English proficiency diversity, and demographics. These factors may influence the applicability of the findings, meaning they cannot be universally generalized to all high school students in Thailand or globally.

5. Limitations and Recommendations

While the study yielded promising results regarding the effectiveness of peer assessment and collaborative writing on EFL Thai high school students' writing performance, several limitations should be noted. The findings are limited in generalizability due to the small sample size and the inclusion of students from only one high school. Future research should include a larger, more diverse sample to enhance the external validity of the results. The self-reported nature of the qualitative data introduces potential bias, suggesting the need for triangulating with classroom observations or written reflections. Moreover, as the study was conducted within the Thai context, cultural factors may have influenced the results, highlighting the necessity for comparative studies in different cultural and educational settings. Notably, the absence of a control group may prevent a clearer understanding of the treatment's effects.

One notable limitation in the students' work was the frequent spelling and grammar errors, which sometimes detracted from the overall clarity of their arguments. To mitigate these issues, additional language support mechanisms were implemented. During the collaborative feedback sessions, students were encouraged to focus not only on content but also on correcting each other's language use. Additionally, a supplementary grammar workshop was provided midway through the study to enhance students' understanding of common English language errors. These steps helped reduce spelling and grammar issues in the final drafts. Future studies could benefit from integrating more targeted grammar interventions alongside peer assessment to further improve linguistic accuracy.

Future study should also include a control group to provide clearer results regarding the teaching model. Teachers should enhance feedback training and provide clear guidelines to help students develop the necessary skills for effective feedback delivery. Encouraging students to spend more time familiarizing themselves with collaborative writing may amplify its benefits alongside peer review. Additionally, employing diverse data collection methods, such as classroom observations and teacher assessments, could offer deeper insights into the intervention's effects. Finally, future research should explore the long-term impact of this approach and its applicability across varied learning contexts and proficiency levels.

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