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The Impact of Using Jigsaw Reading Technique with Pedagogical Translanguaging on Students' Reading Comprehension and Metalinguistic Awareness

Roderick Julian Robillos*
Khon Kaen University, Khon Kaen, Thailand
**Corresponding author: rodero@kku.ac.th*

Article information	
Abstract	While existing research has extensively explored the theoretical dimensions of translanguaging, there is a notable gap in empirical studies on its pedagogical applications. Specifically, the combined impact of translanguaging and collaborative techniques like the jigsaw technique on language competencies remains under-researched. This study aimed to investigate the impact of the jigsaw reading technique with pedagogical translanguaging on students' reading comprehension and metalinguistic awareness. Conducted with a purposive sample of 30 Thai EFL university students over ten sessions, this study employed a sequential, mixed-method approach. Quantitative data were collected through pre- and post-reading comprehension tests, reading comprehension quizzes, and sentence grammaticality judgment tasks, while qualitative data were gathered via semi-structured interviews. Results indicated significant improvement in students' reading comprehension, with mean scores increasing from $M = 10.43$ (pre-test) to $M = 14.87$ (post-test). Notable gains were observed in identifying main ideas and text comprehension, although improvements in cloze reading tasks were less pronounced. Additionally, the

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	reading quizzes revealed an upward trend in overall scores (significant at $p < .001$), even after applying the Bonferroni correction, indicating all quiz scores differed significantly from each other. Metalinguistic awareness tasks showed improvement from quizzes 1 to 4 with mean scores of $M = 11.43$, $M = 12.93$, $M = 13.70$, and $M = 14.73$, respectively. Qualitative insights revealed students' positive responses to the intervention. This study highlights the benefits of combining translanguaging with collaborative techniques in enhancing EFL students' reading comprehension and metalinguistic awareness.
Keywords	jigsaw reading technique, metalinguistic awareness, pedagogical translanguaging, reading comprehension, pedagogical translanguaging synergies
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1. Introduction

Reading comprehension, fundamental to the act of reading, involves decoding and assimilating information within written discourse, laying the groundwork for knowledge acquisition and cultural engagement (Dong et al., 2020). This cognitive skill, especially crucial for students, entails a complex interplay of mechanisms, including word recognition, interpretation, and the creation of mental representations. Proficiency in reading comprehension relies on lexical acumen, the ability to deduce implicit information, and effective use of working memory. Despite its complexity, reading comprehension remains indispensable across academic pursuits and educational levels (Meng, 2010), and is particularly crucial in higher education for deciphering complex textual constructs (Chavangklang & Suppasetseree, 2018; Hungwe, 2019).

Recent global assessments highlight the growing challenge of students' reading comprehension (Hungwe, 2019). This concern is evident in South Africa and beyond, where various factors contribute to inadequate text understanding (Hungwe, 2019). Worldwide, significant numbers of Filipino schoolchildren struggle with basic text comprehension (UNICEF, 2023), and Thai students face a troubling deficit in reading skills (OECD, 2019). Thai university EFL learners also encounter obstacles in effectively using English materials (Chavangklang & Suppasetseree, 2018). These trends are fueled by multiple hindrances, including ineffective instructional strategies (Taladngoen et al., 2020), insufficient emphasis on English reading and writing (Hungwe, 2019; Taladngoen et al., 2020), language barriers, and traditional teaching methods discouraging active engagement (Dole et al., 1991; Robillos, 2023). The lack of collaborative approaches (Chavangklang & Suppasetseree, 2018; Herman et al., 2020) and limited encouragement to use languages for deeper comprehension (García & Li, 2014; Otheguy et al., 2018; Robillos, 2023) exacerbate the issue, emphasizing the urgent need for targeted interventions.

The factors mentioned above, which contribute to poor achievement in reading comprehension, highlight the pressing issue of inadequate reading comprehension skills among students. This concern must be addressed (Hungwe, 2019; Robillos, 2023; Taladngoen et al., 2020). To tackle this problem, educators need to revamp their teaching approaches and strategies to enhance students' reading comprehension abilities.

Research shows that collaborative discussions among students significantly improve comprehension and overall development (Ayu et al., 2021). The jigsaw reading technique, a widely used cooperative strategy for teaching reading skills, emphasizes the interaction between text and learners' characteristics in the reading process (Ayu et al., 2021; Chavangklang & Suppasetseree, 2018; Herman et al., 2020; Kagan, 1994; Kazemi, 2012). This

approach encourages active listening, engagement, interaction, teaching, and cooperation, assigning crucial roles to each group member. In the jigsaw reading technique, classrooms are divided into small groups, with each group responsible for discussing a specific piece of knowledge with classmates (Aronson, 2008). While the jigsaw reading technique enhances comprehension, especially in reading texts, collaboration alone may not be sufficient, especially when dealing with L2 (English). To address this, incorporating a linguistic repertoire that allows students to *translanguage* during collaboration proves effective in improving text comprehension.

Recognizing the importance of linguistic resources, scholars (Cenoz, 2017; Leonet et al., 2020; García & Li, 2014; Hungwe, 2019; Robillos, 2023) suggest that students can benefit from using their linguistic knowledge collaboratively. This process, known as "translanguaging," involves students explaining ideas to each other using their own linguistic skills, leading to a more profound understanding (García & Li, 2014). Embracing linguistic diversity during interactions with peers (Hungwe, 2019; Robillos, 2023) enhances the meaningfulness of the learning experience.

Translanguaging involves creating a learning environment that strategically incorporates students' resources from their complete linguistic repertoire (García & Li, 2014). Teachers employing translanguaging techniques shift their teaching methods towards linguistic inclusivity (García et al., 2017). This includes guiding students to develop metalinguistic awareness through activities like comparing, analyzing, discussing, and reflecting on various languages (Arteagoitia & Howard, 2015; Cenoz & Gorter, 2014). Instead of simply switching to English, students are encouraged to engage in critical thinking about what they already know, fostering connections between different languages. "Metalinguistic awareness," as defined by Cenoz and Gorter (2014), involves understanding various aspects of a language system, such as phonological, morphological, pragmatic, and lexical elements. They underscore the importance of enhancing students' metalinguistic awareness

by utilizing their entire linguistic repertoire, as different languages offer features that can serve as reinforcing resources without causing interference. Significantly, metalinguistic awareness often encompasses phonological, morphological, and orthographical elements, which play a crucial role in reading comprehension (Dong et al., 2020; Tighe & Schatschneider, 2016; Tighe et al., 2019).

The present study holds significant importance as it tackles a crucial issue within the Thai EFL context. Current methods for teaching reading comprehension heavily rely on traditional approaches, leading to reduced student motivation for collaborative learning (Chavangklang & Suppasetseree, 2018; Robillos, 2023; Taladngoen et al., 2020). The prevalent English-only policy further limits students' use of their complete linguistic abilities, hindering their capacity for deep text understanding. The study aimed to fill this research gap in the Thai EFL context by investigating the synergistic impact of the jigsaw reading technique and pedagogical translanguaging on enhancing Thai EFL university students' reading comprehension and metalinguistic awareness, with the following research questions:

1. Is there a significant difference between students' pre- and post-reading comprehension performances after using the jigsaw reading technique with pedagogical translanguaging?

2. Are the students' reading quizzes improved after using the jigsaw reading technique with pedagogical translanguaging?

3. Is the students' metalinguistic awareness enhanced after the implementation of the jigsaw reading technique with pedagogical translanguaging?

4. What learning experiences have the students gained in improving their reading comprehension and metalinguistic awareness after the implementation of jigsaw reading technique with pedagogical translanguaging?

The overarching goal was to enhance the reading comprehension skills of Thai EFL university students and promote metalinguistic awareness, which plays

a crucial role in reading comprehension (Dong et al., 2020; Tighe & Schatschneider, 2016; Tighe et al., 2019).

2. Literature Review

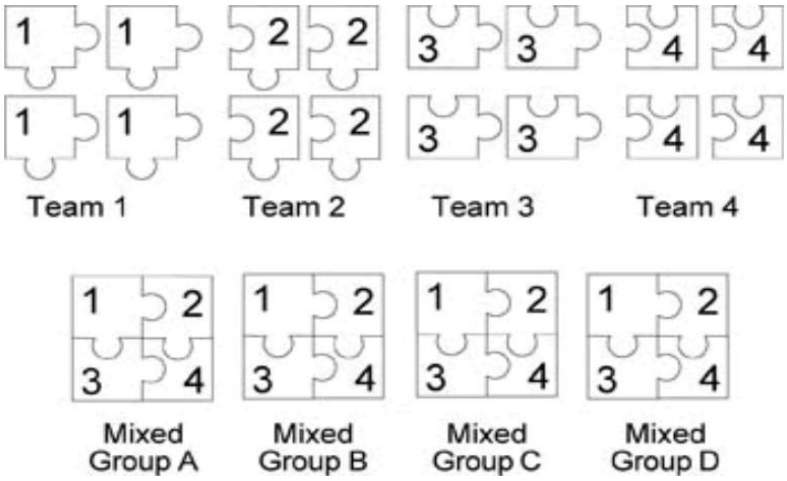
2.1 Jigsaw Reading Technique: Its Implementation and Benefits for Students' Reading Comprehension

The jigsaw reading technique, developed by Elliot Aronson in 1971 and refined by Robert Slavin in 1986, is a recognized teaching method for promoting cooperative learning. This approach encourages active engagement, interaction, teaching, and collaboration within small groups of four to six students. Each group is assigned specific knowledge to share with their peers. The lesson is divided into subcategories, with small groups (or "Home Groups") assigned one subcategory each. After researching, students meet with counterparts from other groups (or "Expert Groups") who share the same topic, enhancing their understanding. Returning to their home groups, students teach their subcategory, facilitating comprehensive comprehension through notetaking or study guides (see Figure 1).

The jigsaw reading technique, known for fostering collaboration and engagement, creates a dynamic learning environment where each participant's contribution is crucial to achieving collective goals (Astane & Berimani, 2014; Chavangklang & Suppasetseree, 2018; Herman et al., 2020). It reinforces cooperative learning elements like positive interdependence and individual accountability, aligning with Slavin's (1991) emphasis on communicative language practice in a supportive environment. Wittrock (1991) highlights the shift from passive to active understanding, integrating concepts with experiences and existing knowledge.

Figure 1

Grouping (Home Group) and Regrouping (Expert Group) in Jigsaw Reading Technique



Various studies emphasize the positive impact of the jigsaw reading technique on students' reading achievement. Ayu et al. (2021) focused on first-year students, implementing the jigsaw reading technique to improve the quality of the reading learning process, finding that it promoted better comprehension and cooperation. Kazemi (2012) studied Iranian EFL learners, revealing a significant improvement in post-test reading scores with the jigsaw method. Perkins and Saris (2001) asserted that jigsaw enhanced content understanding, optimized class time, and provided diverse learning experiences. Aronson (2008) notes improved individual and group responsibility, fostering collaboration. Marwati (2013) specified the jigsaw reading technique's natural system for individual accountability, communication leadership, and discussion skills across groups. This is supported by Astane and Berimani (2014), who highlighted the primary advantage of fostering a team atmosphere and peer acceptance.

While numerous studies have demonstrated the effectiveness of the jigsaw reading technique in enhancing students' reading comprehension and cooperative learning skills, there are still certain gaps in the literature that warrant further exploration. One significant gap is the integration of the jigsaw reading technique within multilingual educational contexts. Most existing research on the jigsaw

technique has been conducted in monolingual settings, primarily focusing on single-language instruction (Ayu et al., 2021; Kazemi, 2012). There is a lack of studies investigating how the jigsaw reading technique can be adapted and integrated to support students who use multiple languages. This gap highlights the need for research that explores the potential benefits and challenges of applying the jigsaw technique in classrooms where linguistic diversity is a key characteristic.

Additionally, while the jigsaw reading technique has been shown to improve reading comprehension and cooperative skills, there is limited research on its impact on metalinguistic awareness (i.e., the ability to think about and manipulate language structures). Understanding how the jigsaw technique influences metalinguistic awareness could provide deeper insights into its cognitive benefits and further justify its use in language education. This gap suggests that future studies should investigate the broader cognitive effects of the jigsaw reading technique beyond reading comprehension alone.

2.2 Pedagogical Translanguaging as Distinguished from Spontaneous Translanguaging

Translanguaging is a prominent focus in contemporary language and educational research, including in L2/EFL conferences, scholarly literature, and global studies. Coined by Williams (1994), it emphasizes the native language's crucial role in L2 development. Pedagogical contexts embracing translanguaging move beyond strict "English-only" policies, viewing learners not as deficient non-native English speakers but as proficient agents with diverse multilingual repertoires. Translanguaging proves to be an effective pedagogical approach, fostering enhanced learning outcomes for bi/multilingual students. It builds linguistic confidence in the target language and allows monolingual students to grasp aspects of the native language (Cenoz & Gorter, 2021; Leonet et al., 2017; Hungwe, 2019; Robillos, 2023).

Translanguaging manifests in two primary modes: pedagogical and spontaneous (Galante, 2020). Pedagogical translanguaging, as defined by Cenoz and Gorter (2021), is a structured teaching approach that strategically incorporates various languages for both input and output activities, enhancing language and content proficiency. For instance, teachers may introduce discussions and assignments in multiple languages to bridge learners' competences and deepen subject understanding. In contrast, spontaneous translanguaging serves as a pedagogical tool, fostering awareness of how languages function within authentic communication, especially in settings where languages naturally intermingle (Cenoz & Gorter, 2014).

The distinction between these modes is not always clear-cut, existing on a continuum accommodating intermediate scenarios (Cenoz & Gorter, 2021) (see Figure 2). This fluidity emphasizes the dynamic nature of language use, acknowledging that these modes are not rigid categories but adaptable approaches for specific educational objectives (Leonet et al., 2017). Pedagogical translanguaging, designed by teachers, can coexist with spontaneous translanguaging. Instructors seamlessly incorporating different languages during lessons can integrate these instances into the broader educational process, enriching students' learning experiences (Cenoz & Gorter, 2014; (Leonet et al., 2017).

Figure 2

Continuum Between Pedagogical and Spontaneous Translanguaging

Pedagogical translanguaging (Cenoz, 2017), extending beyond the original scope, encompasses a broader range of practices utilizing all linguistic resources. It goes beyond language switching, including activities fostering metalinguistic awareness, such as analyzing, comparing, and reflecting on different languages. These practices contribute to students' language and cognitive development, aligning with broader language education goals (Cenoz & Gorter, 2021; Leonet et al., 2017). The strategies cover phonological nuances and pragmatic language use, making them versatile across diverse learning contexts, including language-focused and content-driven subjects. This integrative approach ensures students engage with languages on multiple levels, from pronunciation intricacies to effective communication subtleties in various contexts (Leonet et al., 2017).

The current literature extensively explores the structured nature of pedagogical translanguaging and the naturally occurring aspects of spontaneous translanguaging. However, a potential gap emerges in the nuanced understanding of how these two modes dynamically interact in various educational settings, particularly within the continuum that accommodates intermediate scenarios.

2.3 Pedagogical Translanguaging and Its Relationship to Reading Development

Research on the relationship between pedagogical translanguaging and students' reading comprehension skills presents varied outcomes, showcasing potential benefits and instances of inconclusive effects. Chu (2017) found that incorporating L1 questions significantly improved sixth graders' literal, inferential, and evaluative reading comprehension levels, indicating a stronger correlation with L2 proficiency. Vaish (2019) integrated translanguaging for Grade 2 bilingual students, enhancing vocabulary, grammar, and comprehension. Hungwe (2019) applied paraphrasing techniques within a translingual framework, benefiting multilingual medical students in their first year. However, some studies, such as Qureshi and Aljanadbah's (2022) examination of translanguaging's impact on L2 students' reading progress, showed no significant difference between groups

exposed to translanguaging and those who were not. Limited exposure duration may have influenced these findings. Lyster's (2019) study on using translanguaging to boost motivation and engagement did not manifest improvement in students' L2 proficiency.

A critical yet underexplored aspect of pedagogical translanguaging is its potential to enhance students' metalinguistic awareness, which is crucial for reading comprehension. Metalinguistic awareness refers to the ability to reflect on and manipulate linguistic structures, significantly impacting one's ability to comprehend text. Chu's (2017) findings suggested that the use of L1 in questioning not only aided in comprehension but also encouraged students to think about language structure and meaning, thereby fostering metalinguistic awareness. Vaish (2019) observed that bilingual students engaging in translanguaging showed improved vocabulary and grammar, which could be attributed to their enhanced ability to understand and manipulate linguistic rules across languages. Hungwe's (2019) study on paraphrasing within a translingual framework suggested that such activities helped students break down and analyze language, further developing their metalinguistic skills.

Despite these potential benefits, the literature provides mixed findings, highlighting the need for further research. Qureshi and Aljanadbah (2022) did not find significant differences in reading progress, possibly due to insufficient exposure to translanguaging practices. Lyster's (2019) study, which focused on motivational aspects rather than direct linguistic proficiency, underscored the necessity of targeted pedagogical strategies to enhance metalinguistic awareness. Future research should investigate how translanguaging practices can be designed to specifically enhance metalinguistic awareness and its subsequent impact on reading comprehension, considering contextual factors and ensuring the generalizability of outcomes across different educational settings.

2.4 Pedagogical Translanguaging and Metalinguistic Awareness

The adoption of pedagogical translanguaging by teachers marks a transformative shift in pedagogical practices, ushering linguistic inclusivity into the classroom (García et al., 2017). This approach is strategically designed to bolster students' metalinguistic awareness, encouraging them to engage in activities such as comparing, analyzing, discussing, and reflecting upon different languages (Arteagoitia & Howard, 2015; Leonet et al., 2017). Rather than merely transitioning between languages, students are prompted to delve deeper by contemplating what they know and what they recognize, thus actively bridging connections across languages.

Metalinguistic knowledge encompasses a broad understanding of language principles (Tighe & Schatschneider, 2016) and an awareness of the intricate facets of language systems (Tighe et al., 2019), spanning from phonological aspects to pragmatic and lexical nuances. Metalinguistic knowledge plays a pivotal role in facilitating reading comprehension (Dong et al., 2020; Tighe & Schatschneider, 2016; Tighe et al., 2019), and several studies have emphasized the significance of specific forms of metalinguistic awareness in enhancing reading comprehension. For instance, Arteagoitia and Howard (2015) conducted research demonstrating that students exhibited improvement in their utilization of cognates, showcasing their ability to discern similarities between English and Spanish words with shared origins. Leonet et al. (2020) ventured into a quantitative exploration focused on the morphological aspect within English as a foreign language. The results illuminated enhanced morphological awareness among learners and underscored the enjoyable nature of the translanguaging approach as an instructional tool.

2.5 Integration of the Jigsaw Technique and Pedagogical Translanguaging

Combining the jigsaw technique with pedagogical translanguaging offers a powerful approach to enhance students' learning experiences and outcomes. In

this integrated method, students are assigned different sections of a text or topic to study and then regroup to teach each other. This process involves using both their L1 and L2, allowing them to leverage their full linguistic repertoire. For example, while presenting their assigned section, students may use their L1 to clarify complex ideas and their L2 to discuss broader concepts with peers. This bilingual or multilingual interaction enriches the learning environment by facilitating deeper discussions and ensuring that all students understand the material thoroughly, regardless of their language proficiency.

The integration of the jigsaw technique with pedagogical translanguaging also significantly enhances students' metalinguistic awareness. As students articulate and teach content across different languages, they engage in reflective practices that highlight linguistic differences and similarities. This bilingual or multilingual discourse promotes a deeper understanding of language structures and vocabulary. By switching between languages and explaining concepts in both L1 and L2, students develop a heightened awareness of how languages function and interact. This increased metalinguistic awareness not only improves their ability to comprehend and manipulate language but also enhances their overall reading comprehension and cognitive flexibility.

Many studies reviewed primarily employed a quantitative approach, using reading comprehension questionnaires to assess the impact of translanguaging on reading proficiency (Chu, 2017; Leonet et al., 2017; Qureshi & Aljanadbah, 2022). These studies often featured brief single-class sessions, potentially influencing observed changes (Qureshi & Aljanadbah, 2022; Vaish, 2019), and predominantly used spontaneous translanguaging for reading tasks (Hungwe, 2019). Additionally, while literature acknowledges the effectiveness of the jigsaw technique in improving reading comprehension, there is a research gap in understanding how the use of linguistic repertoires contributes to meaningful comprehension while learning with this technique. Furthermore, there is a lack of understanding of how pedagogical translanguaging enhances students'

metalinguistic awareness, which is crucial for reading comprehension as emphasized by scholars (Dong et al., 2020; Leonet et al., 2017; Tighe & Schatschneider, 2016; Tighe et al., 2019). This exploration is particularly relevant in the Thai EFL education context, where research on this specific aspect has been notably scarce. Hence, this study aimed to fill this research gap in the Thai EFL context by investigating the synergistic impact of the jigsaw reading technique and pedagogical translanguaging.

3. Methodology

3.1 Research Design

The current study employed a sequential mixed methods research type, using a deliberate progression from quantitative analysis to qualitative exploration (Creswell & Plano-Clark, 2017). This approach began with the quantitative phase, where it focused on obtaining data that addressed the impact of the intervention on both students' reading comprehension performance and their metalinguistic awareness. Through this aspect, the study sought to ascertain the quantitative efficacy of employing the jigsaw technique with pedagogical translanguaging as an instructional tool. Parallel to the quantitative strand, the qualitative phase was integral to the exploration of students' experiential insights. This facet delved into the nuanced dimensions of the intervention's implementation by investigating the actual experiences of students engaging with the intervention as a facilitative tool for both reading comprehension and metalinguistic awareness tasks. This qualitative inquiry provided a contextualized understanding of how the intervention impacted learners' perspectives, interactions, and engagement with the learning process.

Furthermore, a single-group pre- and post-test design was used. This design is generally used to measure the impact of an intervention or treatment on a specific outcome within a single group of participants (Creswell & Plano-Clark, 2017). It involves assessing the same group of participants at two points in time: before the intervention (pre-test) and after the intervention (post-test). The

primary purpose of this design is to evaluate changes in participants' knowledge, skills, attitudes, or behaviors as a result of the intervention.

3.2 Participants

The participants in this study consisted of 30 students from a study-university comprising 11 males and 19 females, aged between 19 and 20 years. Classified as independent users of English at the B1-B2 CEFR level, these students demonstrated a good level of English proficiency. They were selected based on predefined criteria aligned with the research objectives, as they faced common challenges in reading comprehension and often had limited exposure to metalinguistic knowledge. Enrolled in the "Integrating Academic Content and Language Awareness" course, these students were engaged in a key component of their teaching program designed to enhance both their reading comprehension and metalinguistic awareness. The purposive sampling method (Best & Khan, 2006) ensured that the participant group was representative of the typical demographic for this course, including those who were actively involved and likely to benefit from the intervention. By focusing on students at a relevant stage in their academic development and in a course that directly aligned with the study's goals, the research aimed to offer meaningful insights into the intervention's impact. This participant group accurately reflected the typical cohort within the teaching program, ensuring the findings would be applicable to similar educational settings. Furthermore, the participants were briefed on the study's objectives, their responsibilities, the confidentiality of their responses, their right to withdraw from participation at any time, and the opportunity to seek clarification on research procedures (Cohen et al., 2000).

3.3 Content and Materials

The reading passages used in this study were selected from the *Language Awareness* (8th Edition), book authored by Eschholz et al. (2014). This resource was chosen due to its relevance and alignment with the study's focus on enhancing reading comprehension and metalinguistic awareness. The selected passages,

which covered various themes related to language and communication, were specifically chosen to reflect regular classroom reading topics and to ensure that students could engage with and interpret the material effectively. Furthermore, the subject likewise aimed to help students recognize language variations, fostering appreciation for their L1 and identifying commonalities with English. The subject focused on refining reading and comprehension skills, interpreting texts of four to eight paragraphs. English was the primary medium of instruction for most subjects in the program (Robillos, 2023), yet many students faced challenges in comprehending English reading materials, raising concerns. Given the researcher's dual role as both investigator and lecturer, the decision to conduct this study stemmed from the aim to enhance students' reading comprehension and metalinguistic awareness. To tackle these challenges, the researcher employed the jigsaw reading technique with pedagogical translanguaging, aiming to aid students in overcoming difficulties while improving English proficiency.

3.4 Research Instruments and Data Collection

This study utilized four instruments to gather comprehensive data on participants' reading comprehension and metalinguistic awareness: (1) pre- and post-reading comprehension tests, (2) reading comprehension quizzes, (3) sentence grammaticality judgment tasks, and (4) semi-structured interviews. Each instrument is detailed below.

3.4.1 Pre- and Post-reading Comprehension Tests

The pre- and post-tests were employed to evaluate the impact of using the jigsaw reading technique with pedagogical translanguaging on participants' reading comprehension performance. These tests focused on four short reading passages, each aligned with their regular classroom topics. The pre-test, which utilized conventional reading instruction methods such as question posing and schema activation, was administered one week prior to the intervention. The post-test, conducted the day after the intervention, aimed to measure any changes in reading comprehension performance.

To ensure content validity, the test items were reviewed by a panel of experts in the related field using the index of item-objective congruence (IOC). Feedback from this panel was used to refine the test items, ensuring alignment with the intended reading comprehension skills, study objectives, and curriculum standards. Additionally, the tests were piloted with a sample of students (non-participants) similar to the study sample, and item analysis was performed to identify and revise or remove any problematic items. Cronbach's alpha values for both the pre-test and post-test were reported as 0.87, indicating high reliability. Furthermore, the pre- and post-reading comprehension tests were designed as parallel tests, ensuring comparable difficulty, format, and content. Both tests consisted of passages and questions of similar length and complexity, covering the same reading comprehension skills. A test blueprint guided the development of both tests, ensuring consistency in the types of questions and the skills assessed. Each test comprised 20 items, divided into four types: (a) identification of main ideas (MI), (b) cloze reading (CR), (c) determining the meaning of vocabulary in text (V), and (d) text comprehension (TC).

3.4.2 Reading Comprehension Quizzes

These reading comprehension quizzes were designed by the researcher. However, to ensure their quality and relevance, the quizzes underwent evaluation by three experts who were English lecturers at the study-university, confirming cognitive appropriateness. Furthermore, these quiz items were reviewed by a panel of experts in the related field to ensure content validity, using the index of item-objective congruence (IOC). Feedback from this panel was used to refine the quiz items, ensuring they aligned with the intended reading comprehension skills, study objectives, and curriculum standards. Reliability was assessed through internal consistency measures, with Cronbach's alpha values for the quizzes reported as 0.89, indicating high reliability. Moreover, these quizzes were designed with careful attention to ensure comparable difficulty, format, and content. All quizzes consisted of passages and questions of similar length and complexity, covering the

same reading comprehension skills. A test blueprint was used to guide the development of the quizzes, ensuring consistency in the types of questions and the skills assessed.

The reading comprehension quizzes were used to measure students' improvement throughout the intervention. The use of parallel quizzes allowed for a direct comparison of scores, providing a clear indication of any improvements. These quizzes were given after each reading session, totaling four quizzes conducted during the intervention period. Each quiz comprised four distinct reading task types, with five items for each type (each correct response was awarded one mark, while incorrect responses received no mark.), resulting in a total of 20 items per quiz. The reading task types are constituted of MI, CR, V, and TC.

3.4.3 Sentence Grammaticality Judgment Tasks

The metalinguistic awareness of the students in this study was assessed through grammaticality judgment tasks for sentences, patterned from Kemp (2001) and slightly modified by the researcher, and checked by three English language experts. These tasks were designed to evaluate participants' perceptions of well-formed sentences and their ability to discern linguistic acceptability. This assessment occurred during the second session of each meeting. Prior to the individual quiz, there was a classroom discussion involving examples related to the metalinguistic awareness task. During this discussion, students were encouraged to engage in translingual practices. Moreover, the task topics were derived from reading texts. These topics encompassed singular and plural agreement, comparatives and superlatives, modals/modal-like expressions, verb tenses, and countable/uncountable nouns/articles. Each topic consisted of two items. Additionally, the sentence grammaticality judgment tasks were evaluated through two distinct metrics: the detection rate and the explanation rate. The detection rate, assessed for the identification of errors, carried a potential score of 10 marks. In this scoring scheme, a mark of "1" was assigned to sentences that participants

circled in recognition of incorrect or unacceptable elements. Conversely, the explanation rate was evaluated using a “1” for sentences that students successfully explained with reasons for their incorrectness or unacceptability. A “0” mark was assigned if participants did not attempt to explain the sentence, if the explanation was hard to comprehend, or if the response was deemed inapplicable or unrelated. This dual assessment approach ensured a comprehensive evaluation of participants’ grammaticality judgment skills, encompassing both error detection and explanation proficiency. Furthermore, the tasks were used as individual tasks in the intervention where each student completed the tasks independently, ensuring that the assessment reflected their personal understanding and metalinguistic awareness without external influence.

3.4.4 Semi-structured Interviews

Interviews were conducted one week after the implementation of strategy intervention, which were aimed at eliciting in-depth insights into participants’ utilization of pedagogical translanguaging and the extent to which it contributed to their reading comprehension tasks. All participants were thoroughly informed about the study’s purpose and procedures, and they voluntarily granted their consent to partake in the research. Furthermore, the interviews were carried out after the completion of the intervention. Fifteen participants voluntarily participated in the interview which lasted approximately 30 to 45 minutes per interviewee. Furthermore, the interview questions were designed based on the research objectives and relevant literature. To ensure validity, the questions underwent a rigorous review process by three experts in the English-related field where they provided feedback on the clarity, relevance, and comprehensiveness of the questions, leading to necessary revisions and refinements. Additionally, the interview questions included pilot testing with a small group of non-participants similar to the sample group of the current study. This pilot testing helped identify any potential issues with the questions and ensured they effectively elicited the desired information. Finally, the primary researcher coded the interview transcripts and then re-evaluated the coding after a set period to ensure consistency in the

interpretation and categorization of data. Any discrepancies in coding were identified and addressed, ensuring a reliable analysis process.

3.5 The Intervention

The intervention plan used, the number of sessions, learning activities and tasks, and allocated time are presented in Table 1.

Table 1

The Intervention Plan Used

Session	Stage/s	Learning Activities	Time (mins)
1	Pre-test	Reading comprehension pre-test	60
2	1st Reading Comprehension Task and Quiz #1	The teacher outlined the lesson's objectives and key concepts along with warm-up activities such as brainstorming and asking probing questions in regard to the topic.	30
		The teacher divided the lesson into subcategories, then divided students into groups of four or five. Each small group were created with one student receiving one subcategory of the lesson. These subcategories were primarily organized either by paragraph or by specific sub-topics within the reading material. Each small group received the same set of subcategories, ensuring comprehensive coverage of the material. Once individuals had read their own subcategory, they then met	90

Session	Stage/s	Learning Activities	Time (mins)
		with individuals from other small groups who had the same topic to better develop their understanding and become experts in that specific subcategory. Each student then returned to their original group and taught their subcategory to the rest of their group. Students within the group took notes or filled in a study guide to ensure they understood all subcategories. During the sharing and discussion time, the students were not restricted from using any linguistic resources at their disposal so that they could benefit from their entire linguistic resources. The subcategories were based on the structure of the reading material, either divided by specific paragraphs or key sub-topics. Each student focused on one of these subcategories, collaborated with peers studying the same subcategory in expert groups, and then returned to their home groups to teach/share their subcategory. This method ensured that each student contributed to a well-rounded understanding of the entire lesson's content. Students	

Session	Stage/s	Learning Activities	Time (mins)
		were encouraged to use their full linguistic repertoire, including their L1, L2, and any other languages they knew. This allowed them to express complex ideas more effectively, support each other in understanding challenging concepts, and connect new information to their existing linguistic and cultural knowledge. By leveraging all available linguistic resources, students enhanced their engagement with the material and with each other, contributing to a more enriched learning experience.	
		Reading comprehension quiz #1	60
3	Sentence Grammaticality Judgment Task #1	The teacher presented and discussed sample sentences for the grammaticality judgment tasks. This was followed by a related activity discussed collaboratively. The teacher then encouraged students to translanguage to deepen their understanding. This activity was designed to enhance students' metalinguistic knowledge.	90
		The students were asked to complete the sentence grammaticality judgment tasks individually. These tasks were preceded by a short sentence in italics	90

Session	Stage/s	Learning Activities	Time (mins)
		to help the students observe and understand the context of the sentence they had to evaluate or judge. The students identified something incorrect or unacceptable in the sentences, rating their certainty from 1 (unsure) to 10 (very sure). They were then tasked with revising the sentence to what they believed was correct and explaining why they thought the sentences they corrected were wrong or unacceptable. The participants were given around 60 minutes to work through these tasks. Sentence Grammaticality Judgment Task #1	
4-9	Reading Comprehension Tasks 2, 3, and 4; and Quizzes 2, 3, and 4	Activities along with their allocated time were followed similarly to session #2	
	Sentence Grammaticality Judgment Tasks 2, 3, and 4	Activities along with their allocated time were followed similarly to session #3	
10	Post-test	Reading comprehension post-test	60

3.6 Data Analysis

In analyzing the data, both quantitative and qualitative methods were employed to ensure a comprehensive evaluation. For quantitative data analysis, descriptive statistics were used to compute and present measures such as frequency, mean, and standard deviation, which were systematically organized in tabular format. To identify variations between students' pre- and post-test results, inferential statistical analyses were conducted.

Regarding qualitative data analysis, the responses from the semi-structured interviews were analyzed using topical coding (Creswell & Creswell, 2018) to identify emerging themes. The interviews, designed with open-ended questions aligned with the research objectives, allowed for an in-depth exploration of students' experiences and perspectives. To ensure the questions were effective and clear, a pilot study was conducted with non-participants of the same level, identifying potential problems and issues for necessary adjustments before the main study. Additionally, the interview questions were reviewed and rechecked by English experts teaching at the university to further ensure their clarity and relevance. Consistency was maintained by asking each participant the same set of questions, ensuring comparable responses. To strengthen the analysis, findings from the interviews were triangulated with quantitative data from quizzes and grammaticality judgment tests, providing a comprehensive view of the intervention's impact. Thematic analysis was used to identify key patterns, with systematic coding and theme development to ensure consistency and reliability. Detailed documentation was maintained for transparency and replicability.

4. Results

4.1 Differences Between Students' Reading Comprehension Performances Before and After the Intervention

Table 2 presents the analysis of differences between participants' pre- and post-reading comprehension test results. Students showed a significant improvement on the post-reading comprehension test (M = 14.87, SD = 1.59)

compared to the pre-reading comprehension test (M = 10.43, SD = 1.01). The p-value of .000 was well below the 0.05 level of significance, indicating that the improvement was statistically significant. This improvement in reading comprehension performance could be attributed to the implementation of the intervention. Among the task types, MI (M = 4.27) and TC (M = 4.17) exhibited the most substantial improvements, while CR (M = 3.00) showed relatively less improvement.

Table 2

Differences Between the Students' Pre- and Post- Test Reading Comprehension Performances

Task Types	Pre-test		Post-Test		*t-value*	*p-value*
	M	***SD***	***M***	***SD***		
Identification of Main Ideas (MI)	2.60	0.53	4.27	0.50	10.19	.000
Cloze Reading (CR)	2.53	0.51	3.00	0.45	2.63	.011
Determining Vocabulary Meaning (V)	2.67	0.55	3.47	0.63	6.56	.000
Text Comprehension (TC)	2.50	0.63	4.17	0.46	13.11	.000
Overall	10.43	1.01	14.87	1.59	9.91	.000

Note: $p<0.05$

4.2 Students' Improvement in Reading Quiz Performance After the Intervention

Table 3 reports pairwise comparisons between the means of four quizzes. All comparisons were significant at p<.001, even after applying the Bonferroni correction, indicating that scores for all quizzes differed significantly from each other. Specifically, scores increased significantly over time: the mean score for Quiz 1 was significantly lower than that for Quiz 2, the mean score for Quiz 2 was significantly lower than that for Quiz 3, and the mean score for Quiz 3 was significantly lower than that for Quiz 4.

Table 3

Pairwise Comparisons of the Means of the Four Quizzes

First Quiz	Second Quiz	Mean Improvement	SE	95% CI for Mean Improvement	
1	2	1.80	0.33	0.89	2.72
1	3	3.21	0.36	2.25	4.29
2	3	1.39	0.27	0.71	2.09
1	4	4.31	0.33	3.23	5.56
2	4	2.53	0.21	2.05	3.23
3	4	1.17	0.29	0.41	1.97

Note: All comparisons are $p \leq .001$ after Bonferroni corrections for multiple comparisons applied.

4.3 Enhancement of Students' Linguistic Awareness After the Intervention

Tables 4 and 5 present an encompassing interpretation of the outcomes derived from the students' metalinguistic awareness tasks as demonstrated through sentence grammaticality judgment exercises. This exploration of metalinguistic awareness involved a series of four tasks each undertaken by the students. Table 5 acts as a corroborative companion, substantiating the tangible progression within participants' metalinguistic awareness. The data in Table 4 showcase an ascending trail in mean scores of $M = 11.43$, $M = 12.93$, $M = 13.70$, and $M = 14.70$ for sentence grammaticality judgment tasks 1, 2, 3, and 4, respectively, encapsulating the students' increasing proficiency in recognizing linguistic nuances and grammatical precision.

Table 4

Overall Results in Students' Metalinguistic Awareness

Metalinguistic Awareness Tasks	M	SD
Sentence Grammaticality Judgement Task 1	11.43	1.27
Sentence Grammaticality Judgement Task 2	12.93	1.17
Sentence Grammaticality Judgement Task 3	13.70	1.46
Sentence Grammaticality Judgement Task 4	14.73	1.74

With regard to Table 5, the recorded F value of 76.715, coupled with a remarkably low p-value of .000, signified a pronounced disparity in the mean scores across the four tasks administered. This compelling statistical outcome served as a testament to the substantive impact of the intervention. This influence was apparent in the students' enhanced capacity to identify and evaluate grammatical intricacies and deviations within sentences, aligning seamlessly with the overarching objective of refining metalinguistic awareness.

Table 5

Tests of Within–Subjects (Measure: Measure 1)

Source		Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Meta Awareness tasks	Sphericity Assumed	173.800	3	57.933	76.715	.000	.726
	Greenhouse-Geisser	173.800	1.657	104.857	76.715	.000	.726
	Huynh-Feldt	173.800	1.745	99.573	76.715	.000	.726
	Lower-bound	173.800	1.000	173.800	76.715	.000	.726
Error (Meta Awareness Tasks)	Sphericity Assumed	65.700	87	.755			
	Greenhouse-Geisser	65.700	48.06	1.367			
	Huynh-Feldt	65.700	50.61	1.298			
	Lower-bound	65.700	29.000	2.266			

4.4 Students' Learning Experiences in Improving Their Reading Comprehension and Metalinguistic Awareness

Three themes emerged after conducting the semi-structured interviews.

4.4.1 Benefits of Using the Jigsaw Technique in Facilitating Reading Comprehension

4.4.1.1 Active Engagement

Jigsaw reading requires participants (P) to actively participate in the learning process. In this study, instead of passively reading an entire text, each student was assigned a specific portion, making them responsible for mastering that particular content. This active involvement promoted deeper engagement as students needed to comprehend, analyze, and understand their assigned section thoroughly. Actively engaging with the material enhanced concentration and ensured that students were actively processing the information rather than merely skimming through it. As P2 conveyed:

> Each member is assigned a specific part of the text, and that alone makes us feel more responsible. We are not just a passive reader; we become an expert on our portion. (P2)

4.4.1.2 Varied Perspectives

The jigsaw technique encouraged diverse viewpoints (Perkins & Saris, 2001) by assigning different sections of a text to various students. Each student became an expert on their portion, bringing their unique perspective to the table. During the collaborative discussion, students shared their insights, interpretations, and understanding of their assigned content. This diversity of perspectives enriched the overall comprehension of the text as students benefited from each other's perspectives and interpretations, fostering a more comprehensive understanding of the material. P13 expressed that:

> The jigsaw technique opened up the door to different viewpoints and interpretations in a way I hadn't experienced before. (P13)

4.4.1.3 Encouragement of accountability

In a jigsaw reading activity, each student was responsible for a specific section of the text, fostering a sense of responsibility (Aronson, 2008; Marwati,

2013). Knowing that peers relied on their accurate and comprehensive input motivated students to prepare thoroughly, engage in discussions, and take ownership of their learning. This accountability promoted a more active and participatory classroom environment. P7 stated that:

> Jigsaw reading made me feel accountable to the reading assignments I was assigned to. I know that I am not just reading for myself; my understanding directly impacts the group. (P7)

4.4.1.4. Prevention of Information Overload

Breaking a large text into smaller sections prevented information overload. Students focused on a manageable portion, allowing them to understand key concepts and details before discussing with peers. This approach helped students process information effectively, leading to a deeper understanding of the entire text. As P10 noted:

> I focused solely on my section, which helped me deeply understand key concepts and details without feeling overwhelmed by the entire article. (P10)

4.4.2 Advantages of Using the Jigsaw Technique with Pedagogical Translanguaging in Students' Reading Tasks

4.4.2.1 Enhanced Communication and Collaboration

Jigsaw reading emphasized collaboration, requiring students to share insights, ask questions, and build a comprehensive understanding of a text together. Effective communication was key, with a linguistic repertoire serving as a vital tool. It allowed students to express ideas clearly, listen actively, and adapt their communication for different group members. This diverse language skill set ensured that each contribution was understood, enhancing collaboration and fostering a cohesive understanding of the material. As P5 conveyed:

> While explaining complex concepts, I utilize diverse linguistic resources to enhance accessibility and ensure our contributions are easily understood, fostering dynamic collaboration. (P5)

4.4.2.2 Fostered Cultural Competence and Sensitivity

In the jigsaw reading technique, students contributed their diverse linguistic and cultural perspectives, enriching the learning process. Their linguistic repertoire extended beyond language, encompassing cultural nuances. By acknowledging these varied contributions, students developed cultural competence and sensitivity. This recognition fostered respect for different perspectives, creating an inclusive learning environment. Enhancing cultural understanding not only improved classroom collaboration but also prepared students to navigate a diverse world beyond academics. P9 stated that:

> Jigsaw reading transforms learning by integrating diverse cultural perspectives into our understanding of texts, fostering cultural competence and creating an inclusive learning environment. (P9)

4.4.2.3 Broadened Vocabulary and Lexical Expansion

The jigsaw reading technique acted as a catalyst for expanding students' vocabulary and linguistic repertoires. Assigning specific text sections to different students exposed them to diverse vocabulary and linguistic structures, enhancing their understanding and contributing to lexical expansion. Encountering new words prompted students to grasp nuances, fostering lexical growth. The linguistic variety in the jigsaw technique facilitated incorporating acquired words into their expressions, enabling precise and clear articulation of ideas and interpretations. As P11 conveyed:

> Jigsaw reading exposes us to diverse linguistic structures, deepens understanding, and expands vocabulary, enhancing our ability to express ideas clearly. (P11)

4.4.3 Deepened Metalinguistic Awareness

4.4.3.1 Better Comparison of Sentence Discrepancies

Jigsaw reading improved metalinguistic awareness as students assessed sentence correctness, language acceptability, and error explanation. Discussions in their native language enhanced their understanding of verb forms, tenses, comparatives, superlatives, modals, and nouns. By identifying errors and explaining answers, students refined their metalinguistic skills. The significant improvement in quiz results demonstrated jigsaw reading's effectiveness in enhancing students' grasp of language structures and critical metalinguistic skills. P16 highlighted that:

> Using our L1 to analyze errors heightened awareness of language elements such as verbs, tenses, comparatives, and the collaborative sentence analysis deepened our understanding. (P16)

4.4.3.2 Deeper Sense of Learning a Language

Active engagement in translanguage practices fostered dynamic learning, with the pedagogical translanguaging approach enhancing comprehension of complex content and critical awareness of linguistic forms in their L1. This heightened awareness led to a deliberate effort to decipher new concepts by relating them to existing knowledge, providing novel perspectives on their L1. For instance, P7's experience illustrated how translanguaging during discussions increased awareness of her L1's nuances, including challenging Thai idioms and *Isarn* (northeastern dialect) expressions. This analytical process deepened critical thinking, reflecting additive bilingualism where proficiency in L2 was cultivated without diminishing expertise in the L1.

> I gained heightened awareness of the forms of my L1, such as challenging Thai vocabularies and Isarn expressions, which proved difficult to translate into L2, fostering critical thinking about my L1. (P7)

5. Discussion

The study examined the impact of employing the jigsaw technique with pedagogical translanguaging on students' reading comprehension and metalinguistic awareness. Findings demonstrated a significant positive effect on students' reading comprehension performance. Moreover, the intervention deepened students' metalinguistic awareness as they engaged in comparing, analyzing, discussing, and reflecting on language. Notably, students became more active and confident when sharing thoughts and ideas, utilizing their linguistic repertoires in collaborative activities.

5.1 Students' Pre- and Post-reading Comprehension Performances

The findings in Table 1 reveal a significant difference in students' reading comprehension as evidenced from their pre- and post-reading comprehension results. This might be attributed to collaborative use of the jigsaw reading technique and pedagogical translanguaging. The technique, emphasizing text division and collaborative interaction, played a crucial role. Students, while engaging collaboratively, discussed, analyzed, and shared insights using their varied linguistic repertoires, contributing to a deeper understanding and improved comprehension. This combination supported students in navigating complex textual content, allowing them to confidently express ideas and grasp information from peers. Notably, the improvement aligned with studies by Chu (2017), García and Li (2014), Hungwe (2019), and Otheguy et al. (2018), emphasizing the effectiveness of linguistic repertoires in enhancing comprehension. Analyzing the four comprehension task types, intervention results indicated overall improvement, particularly in MI and TC. The jigsaw technique, with its focused engagement strategy, enhanced main idea identification and text comprehension. The integration of pedagogical translanguaging further boosted reading comprehension by reducing language barriers and facilitating deeper engagement with the content. The combined use of the technique and pedagogical translanguaging created a synergistic effect, fostering an environment where

students actively engaged, discussed, and analyzed using diverse linguistic repertoires.

5.2 Improved Students' Reading Quiz Performances

The study's finding of a dramatic improvement in students' reading quiz performances was a significant testament to the effectiveness of the intervention. Despite starting from a lower baseline, the subsequent progress observed in their reading comprehension quizzes was indicative of the intervention's positive impact. This improvement suggested that the implemented jigsaw technique with pedagogical translanguaging successfully addressed the specific challenges faced by the participants, leading to enhanced performance on reading quizzes. The combination of the jigsaw technique and pedagogical translanguaging created a dynamic learning environment where students not only mastered the content collaboratively but also expressed their understanding with linguistic nuance. The structured approach of the jigsaw technique ensured content mastery (Chavangklang & Suppasetseree, 2018; Hungwe, 2019), while pedagogical translanguaging facilitated more effective communication and expression of comprehension (Arteagoitia & Howard, 2015; Cenoz & Gorter, 2014; Leonet et al., 2017) This synergy fostered a holistic improvement in reading comprehension skills, leading to the observed dramatic progression in reading quiz performances.

5.3 Improved Students' Metalinguistic Awareness

Study findings revealed a significant improvement in students' metalinguistic awareness, particularly in their ability to detect, recognize, and articulate errors within sentences. Initially, participants demonstrated a tendency to identify errors without offering detailed explanations in the initial quiz. However, progress in grammaticality judgment tasks throughout the study indicated improvements in understanding language structures. The role of pedagogical translanguaging became apparent in addressing the initial challenge of limited error explanation. Pedagogical translanguaging facilitated a linguistic repertoire

aligned with students' proficiency and comfort, bridging the gap between error detection and articulate linguistic insights (Cenoz & Gorter, 2014). Consequently, students exhibited enhanced metalinguistic awareness over the course of the study, moving beyond mere error pinpointing to providing more comprehensive and nuanced explanations, underscoring the crucial contribution of pedagogical translanguaging in refining students' ability to navigate and articulate linguistic intricacies.

Translanguaging plays a vital role in vocabulary development by associating new words with their equivalents, fostering a nuanced understanding (Robillos, 2023). In this study, when students engaged in comparing grammatical structures across languages, they embarked on a thoughtful examination of how different languages expressed similar ideas, a practice that was fundamental to pedagogical translanguaging (Cenoz & Gorter, 2014). This comparison prompted students to identify patterns, similarities, and differences in syntax, morphology, and sentence structures (Kemp, 2001). For instance, they may discern distinctions in sentence construction or notice variations in verb conjugations, comparatives and superlatives, countable and uncountable nouns, and modal-like expressions. This reflective process extended beyond a mere exercise in language proficiency; it required a conscious consideration of language rules, encouraging students not only to comprehend structures but also to discern the underlying grammatical rules governing each language. Cenoz and Gorter (2014) have underscored that pedagogical translanguaging enhances metalinguistic awareness as it highlights its direct influence on students' capacity to analyze and explain sentence correctness. This enhanced metalinguistic awareness, shaped by a continuum of translanguaging practices, emerges as a key factor in the broader success of language learning, particularly in the realm of reading comprehension.

6. Limitations

It is likewise important to acknowledge the limitations of the study. The current study recognized the limited availability of comprehensive research that

thoroughly investigates the impact of pedagogical translanguaging across various skills and dimensions of metalinguistic awareness. While the study has revealed positive outcomes in terms of reading comprehension and certain aspects of metalinguistic awareness, its scope may not encompass the full spectrum of effects that pedagogical translanguaging could have on diverse linguistic competencies. This calls attention to a potential limitation stemming from the study's focus on specific skills, potentially overlooking other important language dimensions that might be influenced by the approach. Additionally, the implementation of the jigsaw reading technique in facilitating reading tasks introduces another consideration. The success of the jigsaw reading technique in enhancing reading comprehension may be sensitive to group dynamics and the distribution of expertise within groups. Future studies should consider the intricate interplay between pedagogical translanguaging and diverse linguistic competencies, extending their examination to a wider array of language skills and metalinguistic components. This approach will provide a more comprehensive and nuanced understanding of the broader impacts of pedagogical translanguaging, considering not only specific skills but also the dynamics introduced by collaborative techniques such as the jigsaw technique on language learning.

7. Conclusion

This study has underscored the significant improvement observed through the synergistic impact of the jigsaw technique and pedagogical translanguaging, showcasing improvements in reading comprehension and heightened metalinguistic awareness. The application of the jigsaw technique, when coupled with pedagogical translanguaging, emerges as a catalyst that significantly enriches students' understanding of reading texts. Their adept engagement in metalinguistic tasks, such as unpacking intricate sentence structures and grammatical nuances, exemplifies the profound impact of this collaborative intervention on language learning and text comprehension.

Moreover, the present study has emphasized the multifaceted benefits of pedagogical translanguaging within a collaborative setting, extending beyond linguistic barriers to promote bilingualism. The combination of jigsaw technique and pedagogical translanguaging stands out as a strategic pedagogical tool for comprehending concepts and acquiring an L2. This challenges the conventional notion that translanguaging serves as an excuse to evade L2 production. Thus, educators are encouraged to introduce this collaborative approach in EFL classrooms, recognizing that solely relying on an English-only approach may not effectively address learners' text comprehension challenges. In conclusion, the pedagogical impact of this study lies in challenging traditional perspectives, offering educators a valuable and inclusive approach that recognizes the multifaceted benefits of pedagogical translanguaging in language education, particularly when combined with collaborative methods like the jigsaw technique.

8. About the Author

Dr. Roderick Julian Robillos is a TESOL lecturer at the Faculty of Education, Khon Kaen University, Thailand. His research interests mainly focus on L2/EFL pedagogy, psychology of learning, translanguaging and educational technology. His email: rodero@kku.ac.th

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