The Effect of Collaborative Strategic Reading and Reciprocal Teaching on Reading Comprehension Among Middle School Students

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Abstract

This study aimed to: (a) promote reading comprehension skills among middle school English Language Learners (ELL) and (b) determine whether Collaborative Strategic Reading (CSR) or Reciprocal Teaching (RT) was more effective for promoting reading comprehension. In total, 55 ELL students, ages 12–14, were conveniently sampled into one of two cooperative learning technique interventions. Classroom A received CSR instruction while Classroom B received RT. Interventions occurred biweekly for six weeks. A quasi-experimental pre-test, post-test research design was utilized whereby the effects of CSR and RT were investigated based on participants' reading comprehension assessment scores. Pre-test results indicated that CSR participants had an average score of 69.56%, while the RT students averaged 66.57%. At α = .05, there was no significant difference between the CSR and RT groups at pre-test (p = .42). Then, students in each group received 10 treatment sessions entailing approximately eight hours. The post-test assessment was completed during session 12. Post-test analysis revealed an increase in total score for the CSR group (M = 5.11), and this growth is attributed to the improvement in the vocabulary subtest (M = 16.83), implying that CSR was beneficial in promoting vocabulary skills. The RT group experienced no statistically significant gains.

Keywords: *Reading comprehension, assessment, cooperative learning, ELL*

Background of the Study

Today, reading comprehension skills play a significant role in individuals' academic success and are integral to their daily lives (Yurko & Protsenko, 2020). Proficient reading skills enable people to access and understand vast amounts of information while empowering them to communicate and actively participate in the world around them. To support this, it is imperative to investigate and implement effective instructional strategies to enhance reading comprehension, particularly among young students. The purpose of this study was to explore the effectiveness of two cooperative learning approaches, Collaborative Strategic Reading (CSR) and Reciprocal Teaching (RT), in promoting reading comprehension skills among English Language Learners (ELLs).

Mikulecky (2011) defines "reading" as a sophisticated conscious and unconscious mental process in which the reader utilizes several strategies to piece together the meaning that the author is presumed to have intended, using information from the literature and readers' pre-existing knowledge. These mental processes are likely the bottom-up, top-down, and interactive models; the latter combines the first two models (Ahmadi & Gilakjani, 2012). These models conceptualize reading as a mental process whereby readers break down the individual components of a language and use their decoded understanding of those components to project an understanding (bottom-up), or readers use their pre-existing knowledge to make predictions about the content of the literature (top-down) (Ahmadi & Gilakjani, 2012). Reading comprehension examines a person's capacity to carry out these mental operations concerning a passage, article, or other written literature. Levine et al. (2000) claimed that having the ability to decipher academic texts accurately is arguably the most essential skill for university students who are learning English as a second or foreign language.

Cooperative learning strategies were chosen because higher levels of achievement are often obtained when cooperation among members is encouraged and practiced, according to Johnson and Johnson (2013). Cooperative learning is "the instructional use of small groups so that students work together to maximize their own and each other's learning" (Johnson & Johnson, 2013, p. 2). Additionally, cooperative learning techniques are rooted in social constructivism learning theory.

According to Mvududu and Thiel-Burgess (2012), constructivism is frequently promoted to assess children's comprehension and demonstrate how that comprehension may grow and be transformed into higher-level thinking. The social constructivism theory, which holds that cognitive development first takes place on a social level before moving to an individual one, underlines the significance of the zone of proximal development. The difference between a person's potential development level and their actual developmental level, as established through problem-solving under adult supervision or in cooperation with peers who are more advanced than they are, is known as the zone of proximal development (Vygotsky, 1978).

Collaborative Strategic Reading is an evidence-based, cooperative learning approach that prioritizes student participation, group collaboration (groups of 3–5 students), and four specific strategies to enhance reading comprehension. The four strategies are *preview*, *click and clunk*, *get the gist*, and *wrap-up*. In *preview*, students draw upon prior information and form predictions after scanning the title, headers, images, and highlighted texts. *Click and clunk* happens during the reading process, whereby students self-monitor their understanding of the text by denoting information they understand (*click*) and content that is challenging for them to comprehend (*clunk*). When readers arrive at a clunk, they can use a few strategies to help them better understand the literature. *Getting the gist* involves finding the passage's main idea and noting any significant information mentioned in the text. The *wrap-up* is the last of the four strategies. It requires students to create inquiries and questions related to the subject matter to increase students' comprehension, knowledge, and memorization of the literature (Abidin & Riswanto, 2012). Successful results for using CSR in promoting reading comprehension skills were discussed 25 years ago when Klingner et al. (1998) reported that CSR promoted the reading comprehension capabilities of 85 young ELLs. Additionally, a more recent study by Gani et al. (2016) yielded qualitative results which found that, alongside reading skills, CSR strengthens social interactions and relationships among the participants.

Similarly, Reciprocal Teaching is a highly structured approach that promotes active engagement with the literature by utilizing four strategies: *Predicting*, *questioning*, *clarifying*, and *summarizing*. *Predicting* requires learners to examine the main title, key headers, graphs, tables, diagrams, or illustrations before reading the passage and connecting what they see with their pre-existing content knowledge so they can make educated guesses as to what they might read about. *Questioning* occurs during the reading process whereby students craft inquiries as a way to self-test their understanding of the literature. Questions are focused on the reading passage's key facts, concepts, and ideas. *Clarifying* entails students applying strategies to understand better any deficits they encounter when reading the passage. This metacognitive skill requires learners to self-audit their level of understanding before incorporating a strategy to help them better comprehend the literature. *Summarizing* is the last strategy utilized in RT and is essential for readers. Students must identify the text's primary concepts and significant points before paraphrasing the content in their own words. Through instruction and modeling of these four strategies, RT empowers students to take a more active role in their learning by fostering metacognitive awareness and self-regulation while comprehending the literature (Doolittle et al., 2006). In a quasi-experimental study, Choo et al. (2011) discovered benefits to their participants' reading comprehension capabilities and social skills. Additionally, the theoretical framework of RT was evaluated in a meta-analysis paper written by Ahmadi and Gilakjani (2012), who stated that RT is an effective tool for teaching reading comprehension skills.

Moreover, gender-related differences have been a subject of interest in the context of reading comprehension. Several studies have indicated that girls typically outperform boys in reading abilities (Chiu & McBride-Chang, 2006; Logan & Johnston, 2010). While the factors contributing to these differences are multifaceted and complex (Miller & McKenna, 2016), it warrants further exploration to understand better and address disparities in educational outcomes. Therefore, this study examined any gender-related variances in the effectiveness of CSR and RT to enhance reading comprehension skills, furthering current subject knowledge in education.

Another aspect that should be considered is how reading comprehension is assessed. Assessments for reading comprehension are typically quiz-like and seek to understand how well a reader can conceptualize the information from the written text. Questionnaires consist of multiple items ranging from locating information at the surface level (like finding the date something happened) to drawing inferences (such as the author's purpose for writing the literature). While reading comprehension typically comprises five components (phonics, phonemic awareness, vocabulary, fluency, all of which ultimately result in reading comprehension—Learning Point Associates, 2004), the reading comprehension assessments were not specifically testing for those components in this study. Instead, the assessments utilized here evaluated students' capabilities to successfully answer questions in the following categories: (a) summarize the main idea and key details, (b) sequence passages ordinally, (c) direct-recall questions, (d) drawing inferences and making predictions, and (e) unfamiliar vocabulary (Smarter Intervention, 2019).

In summary, this study sought to contribute to understanding effective instructional practices by investigating the effectiveness of two cooperative learning approaches, CSR and RT, in enhancing reading comprehension among young ELL students. Both approaches are theorized and documented to promote reading comprehension skills effectively. However, more investigative studies are needed to determine which approach is more effective in promoting reading comprehension skills among ELLs. This study will add to the body of knowledge surrounding both reading comprehension among ELLs, as well as CSR and RT.

Methodology

Research Design

This study utilized a quasi-experimental pre-test, post-test design (Table 1). It is classified as a quasi-experimental experiment because participants could not be randomly allocated into the intervention groups. Students were already conveniently allocated to Classroom A or B and were taught alongside their peers, as is usual in their schooling. The A pre-test was implemented to establish baseline levels of reading comprehension before the CSR and RT interventions were introduced. Post-tests were used to measure the effectiveness of both CSR and RT interventions after six weeks of treatment.

Table 1 *Intervention Design*

Group	Pre-Test	Intervention	Post-Test
CSR	01	10 sessions	02
RT	01	10 sessions	02

Note. Each session was a 50-minute IELTS prep course class. The pre-test and post-test were administered in 50-minute class sessions.

With this quasi-experimental pre-test, post-test research design, all the data gathered was quantitative and was in the form of two separate reading comprehension assessments: One pre-test assessment and one post-test assessment. First, the pre-test data were collected before the intervention to establish the baseline performance level of every participant. A reading comprehension assessment consisting of 23 questions was administered and collected in session one of this study.

Next, the intervention was introduced. Instructions were provided to both Classroom A and Classroom B biweekly. Treatments were done during the students' IELTS prep course, as the content of this research was aligned with the course objectives of the class, improving students reading comprehension capabilities. Both the CSR and RT interventions were identical in duration, as were the research instruments utilized (except for the daily worksheet), and the frequency of data collection. While the reading skills of the two cooperative learning techniques are different, the time allotment for a typical intervention session was similar. The main differences were the reading skills being practiced and the daily worksheet. After 10 intervention sessions (Table 2), the post-test reading

comprehension assessment was administered and collected in session 12 of the study. Pre-test and post-test results were analyzed to determine if the interventions effectively promoted the ELL students' reading comprehension capabilities.

Table 2 *Time Allotment for a Typical Cooperative Learning Session*

Duration of Activity	Activity Description
Introduction 5–10 min	Share learning goals, achievement criteria as well as reflecting on the responsibilities of each role
Reading 15–20 min	Individual/paired/partner reading of the assigned text
Analysis 15–20 min	Questions and examination of the text
Plenary 5–10 min	Summarize what was learned and set objectives for the following session

Research Questions

1. What effects do Collaborative Strategic Reading and Reciprocal Teaching have on reading comprehension of 8th grade students?
2. Are the differences in reading comprehension between Collaborative Strategic Reading and Reciprocal Teaching related to gender?

Population and Sampling Technique

A quasi-experimental design was adopted for the study with no control group, where 55 ELL 8th grade students were conveniently assigned to one of two intervention groups—the CSR group ($n = 26$) or the RT group ($n = 29$). The participants were selected from a private school in Bangkok, Thailand. These participants were selected using convenience sampling, meaning they were selected based on their availability and willingness to participate in the study. While this sampling technique might be somewhat representative of the population, it was appropriate for the goals of this study and made it possible to recruit participants efficiently. The sample comprised 28 males and 27 females, ages 12 to 14 years old. Most of the students were of Thai nationality, with a few students from other Asian countries. All participants had been learning English as a second language for several years already.

Ethical Considerations

With this study involving middle-school-aged children, the researchers sought and received permission from the University Internal Review Board at Asia-Pacific International University. Additionally, the Head of the English Program at the private school was briefed and signed a consent form approving and authorizing the study. All participants allowed their reading comprehension assessments to be involved in this study, and their personal information was kept confidential. Students who did not wish to participate in the study were free to make that decision without consequence. Furthermore, the researchers were aware that this was a vulnerable population. Care was practiced throughout the whole process. This study was conducted simply for academic purposes.

Instrumentation and Reading Materials

The two research instruments consisted of the pre-test and the post-test. Both reading comprehension assessments were measured at level B1 of the Common European Framework of Reference for Languages (CEFR). The assessment was retrieved from ieltstestonline.com, specifically the CEFR B1 section of the site. The researchers adapted it slightly to incorporate specific assessment components, such as ordinal sequencing. The components of the reading assessment consisted of summarizing the text, sequencing the events of the passage chronologically, answering direct-recall questions, making an inference, and matching vocabulary terms with their definitions or synonyms. It is significant to note that the post-test was similar; the only significant difference was that there was

one more comprehension question on the post-test. This was the case because the post-test had a slightly higher word count (pre-test: 434 words, post-test: 477 words). Last, the pre-test and post-test measured students' ability to comprehend an expository text in English.

The articles used during both interventions were selected to be at, if not slightly above, the students' proficiency levels. All articles selected measured either CEFR A2 or B1 level and were either expository or narrative. Expository and narrative reading passages were chosen for this study because Homand and Moughamian (2017) found that ELLs had lower reading comprehension scores when compared to learners who spoke English as their native language; ELL scores were lowest on assessments that utilized informational reading texts. Therefore, in this study informational and narrative reading passages were utilized, as they were deemed challenging for ELLs (Homand & Moughamian, 2017). It should also be noted that students did not have the opportunity to select their reading materials; texts were selected by the researchers.

Analysis of Data

Analysis of variance was utilized to compare the differences in pre-test and post-test assessment scores. Descriptive statistics were used to calculate measures of central tendency, such as the mean, as well as measures of variability, such as standard deviation and range. In addition, inferential statistics, specifically paired-sample *t*-tests, were used to examine the differences between pre-test and post-test scores within each group and between the two intervention groups. The results were organized into tables and figures to represent the data and identify patterns or outliers visually.

Results by Research Question

1. ***What Effects Do Collaborative Strategic Reading and Reciprocal Teaching Have on Reading Comprehension of 8th Grade Students?***

The pre-test evaluated the participants' reading comprehension abilities before the CSR and RT interventions. All 55 students completed both the pre-test and post-test, and the results were analyzed by totaling the subtest scores to obtain a total score for each student. Then, each participant's score was converted to a percentage (total number correct/total number of questions) because the pre-test and post-test differed by one question; the post-test had a higher word count, and an extra question was added. Classroom averages for the pre-test and post-test assessments are displayed in Table 3.

Table 3 *Descriptive Statistics of Test Scores by Group*

Group	N	Pre-Test		Post-Test	
		M	SD	M	SD
CSR	26	69.57	12.30	74.68	13.84
RT	29	66.57	14.84	67.10	20.54

Note. Pre-test group differences (t(53) = 0.81, p = .42, ES(d) = 0.22; post-test group difference (t(53) = 1.59, p = .12, ES(d) = 0.43; paired *t*-test (CSR) (t(25) = -2.04, p = .05, ES(d) = 0.40; paired *t*-test (RT) (t(28) = -0.205, p = .84, ES(d) = 0.04.

The CSR students had an average score of 69.57% on the pre-test, indicating their reading comprehension skills were not particularly strong. The RT students' average pre-test score was 66.57%. At α = .05, there was no significant difference between the CSR and RT groups at pre-test (refer to the note under Table 3). The CSR group's gain score (pre-test–post-test) was 5.11 (*SD* = 12.77). That is, the CSR group improved by 5.11%. This change in score was statistically significant (*p* = .05), suggesting that students in that group significantly improved their reading comprehension after six weeks of CSR instruction. Conversely, the RT group improved by an average of only 0.5% (*SD* = 13.95). The change in overall score was not statistically significant (*p* = .84), and indicated that students under RT instruction did not improve in reading comprehension.

The results of the independent samples *t*-test comparing the CSR and RT groups overall and subtests change scores are reported in Table 4. Overall, there was no significant difference in gain scores between the two groups. And the effect size of 0.34 indicates that the magnitude of the difference was small. Significant gain scores were indicated for inference and vocabulary. Reciprocal Teaching students showed significant growth in inference (*M* = 20.69) when compared to CSR students (*M* = -3.85). However, gain scores in vocabulary were significantly higher among CSR students when compared to RT students (*p* = .054).

Table 4 *The t-Test Results for Comparing CSR and RT Groups' Change in Scores*

Gain Score Area	Group	N	M	SD	t	df	p	ES(*d*)
Overall	CSR	26	5.11	12.77	1.27	53	.211	0.34
	RT	29	0.53	13.95				
Ordinal Sequence	CSR	26	6.15	35.22	0.13	53	.898	0.04
	RT	29	4.83	40.23				
Summarizing	CSR	26	-2.69	18.97	0.26	53	.808	0.07
	RT	29	-4.14	24.25				
Direct Recall	CSR	26	4.17	24.30	0.77	53	.189	0.36
	RT	29	-5.17	27.41				
Inference	CSR	26	-3.85	34.42	-2.16	50.20	.035	-0.57
	RT	29	20.69	49.13				
Vocabulary	CSR	26	16.83	24.39	1.97	53	.054	0.53
	RT	29	3.88	24.22				

2. *Are the Differences In Reading Comprehension Between Collaborative Strategic Reading and Reciprocal Teaching Related to Gender?*

The average of pre-test scores of female students in the CSR group was 70.36, while male students had an average score of 68.98. The pre-test revealed no statistically significant gender difference (*p* = .79). Similarly, there were no statistically significant gender performance differences at pre-test for the RT group (female: *M* = 66.30, Male: *M* = 66.89). Gender differences in gain scores among CSR and RT students are reported in Tables 5 and 6, respectively. Table 5 shows the gain scores for both male and female students in the CSR intervention group in terms of a cumulative assessment total, and the total for each subtest area of reading comprehension. Female students had negative gain scores in subtests for summarizing, direct recall, inference, and overall total, while male students made positive gains in all areas. Male students made significantly higher (*p* = .022) total gain scores than female students. The magnitude of the gender difference was immense. Male students also made significantly (*p* = .046) larger gains than female students in the direct recall subtest category.

Table 5 *Gender Differences on Gain Scores (CSR)*

Content Area	Group	N	M	SD	t	df	p	ES(d)
Total	Female	11	-1.42	14.34	-2.445	24	.022	0.97
	Male	15	9.90	9.29				
Ordinal sequence	Female	11	1.82	36.28	-.530	24	.601	0.21
	Male	15	9.33	35.35				
Summarizing	Female	11	-10.91	23.10	-2.001	24	.057	0.79
	Male	15	3.33	13.03				
Direct-recall	Female	11	-6.82	22.30	-2.105	24	.046	0.84
	Male	15	12.22	23.12				
Inference	Female	11	-18.18	40.45	-1.913	24	.068	0.76
	Male	15	6.67	25.82				
Vocabulary	Female	11	14.39	28.59	-0.428	24	.672	0.17
	Male	15	18.61	21.70				

In Table 6, gain scores between male and female students in the RT group are reported. Female students appear to have made negative gains in total test scores and three subtest categories (ordinal sequence, summarizing, and inference). However, no significant gender differences in total and subtest categories were detected.

Table 6 *Gender Differences on Gain Scores (RT)*

Content Area	Group	N	M	SD	t	df	p	ES(d)
Total	Female	16	-2.24	12.16	-1.197	27	.242	0.45
	Male	13	3.94	15.69				
Ordinal Sequence	Female	16	-1.25	40.97	-0.899	27	.376	0.34
	Male	13	12.31	39.61				
Summarizing	Female	16	-6.67	28.49	-0.616	27	.543	0.23
	Male	13	-1.03	18.38				
Direct-Recall	Female	16	-9.38	25.98	-0.913	27	.369	0.34
	Male	13	.0000	29.27				
Inference	Female	16	31.25	47.87	1.300	27	.205	0.49
	Male	13	7.69	49.35				
Vocabulary	Female	16	2.86	23.51	-0.246	27	.807	0.09
	Male	13	5.13	25.97				

Discussion

The CSR group experienced a significant gain (p = .022) in total scores between the pre-test and post-test. Most of this increase is attributed to the vocabulary subtest, implying that CSR was beneficial in promoting vocabulary skills. This finding is similar to that published by Klingner et al. (1998), who stated that CSR successfully promoted the reading comprehension skills of young English language learners. In their study, 85 fourth-grade students were taught by the researchers to apply four reading comprehension strategies; preview, click and clunk, get the gist, and wrap up. The control group had 56 students who did not learn comprehension strategies but received researcher-led instruction in the same content. The results obtained showed that students in the CSR experimental condition had more robust increases in reading comprehension (p = .001) and equivalent gains in

subject knowledge. More recently, a study published by Gani et al. (2016) found that the 32 ELLs assigned to a CSR intervention in Banda Aceh, Indonesia, achieved better scores when compared to the non-CSR group of 35 students. The significance level for this study was $\alpha = .05$, implying that CSR was responsible for the improvement in scores. A qualitative questionnaire was also administered to determine participants' attitudes and perceptions about the CSR technique. It was found that 80% of students in the CSR experimental group provided positive feedback and said that, in addition to fostering better reading skills, CSR provided positive outcomes in participants' social interactions and social relationships in the classroom.

Regarding Reciprocal Teaching, this study did not find anything statistically significant. However, this goes against the findings of other studies, which indicated that RT can be beneficial in improving the reading comprehension capabilities of English language learners. Choo et al. (2011) investigated the relationship between Reciprocal Teaching and reading comprehension. Sixty-eight low-proficiency students participated in their quasi-experimental study. Two classes, consisting of 34 students in total (17 students per class), were assigned to the RT experimental group, while the other 34 students composed the control group. The quantitative and qualitative findings reported indicated that RT was an effective means of fostering reading comprehension skills. Most notable were the qualitative answers submitted on the questionnaire, which showed that 85% of the participants in the RT experimental group responded positively to the reading strategies taught, and 82% claimed they had improved their reading comprehension skills or their language skills in general. There was also a reoccurring theme as to why the participants found the RT strategies beneficial; the common theme cited was teamwork. In 2012, Ahmadi and Gilakjani stated that there was a positive relationship between Reciprocal Teaching and both reading comprehension skills and metacognitive reading strategies. While this was not an experimental study, it investigated the theoretical frameworks composing RT and how the four reading strategies (predicting, questioning, clarifying, summarizing) can impact the reading comprehension skills of English language learners. The findings attested to the theoretical framework of RT as an effective means to foster reading comprehension skills among English language learners.

The findings of our study have presented a compelling and unexpected perspective on the performance of boys and girls in reading comprehension assessments. Contrary to the prevailing literature, which commonly suggests that girls consistently outperform boys in reading comprehension (Chiu & McBride, 2006; Logan & Johnston, 2010), our research uncovered a strikingly different pattern. In this study, we observed that boys outperformed girls on reading comprehension assessments.

These results challenge the widely held assumptions regarding gender-based reading ability and proficiency differences. One possible explanation for the observed discrepancy in our study could be related to the specific instructional strategies and pedagogical approaches employed in the educational settings where the assessments were conducted. The teaching methods utilized might have inadvertently favored boys' learning preferences or strengths, leading to their heightened performance on reading comprehension tasks. Therefore, future research should explore the impact of teaching methodologies and classroom practices on gender differences in reading proficiency.

Furthermore, individual differences within gender groups may be crucial in shaping reading comprehension outcomes. Factors such as prior knowledge, motivation, language background, and socio-economic status might contribute to varying degrees of success in reading comprehension for both boys and girls (Miller & McKenna, 2016). Examining these variables could provide valuable insights into the interplay between gender and reading performance.

In light of the unexpected outcomes of this study, a more balanced and inclusive approach to understanding gender differences in reading comprehension is necessary. Rather than assuming inherent gender disparities, educators and researchers should focus on cultivating a supportive and diverse learning environment that caters to all students' unique needs and strengths, irrespective of gender.

In brief, the present study challenges the prevailing narrative regarding gender differences in reading comprehension and highlights the importance of considering multiple factors that can influence reading performance. One example, given by Miller and McKenna (2016), is the correlation shown between a country's economic development and literacy rates, which indicated that countries with more infrastructure and stronger economies have higher literacy rates. Bangkok, the city from which this study's sample was taken, has enough infrastructure to support a population of 10 million people, supporting the notion that this study's sample may differ from that sampled by Chiu and McBride in 2006. Hence, further investigations are encouraged involving a broader conversation about gender and reading comprehension within the field of education.

Conclusion and Implications

The quasi-experimental pre-test, post-test research design study was undertaken to investigate the effectiveness of two cooperative learning techniques to improve ELL students' reading comprehension skills. The findings revealed that CSR had a slight advantage over RT in enhancing the reading comprehension capabilities of the participants; at a=0.05, the vocabulary acquisition results for the CSR group occurred because of the intervention and not by chance. These results help advance the knowledge of ELL teaching strategies by providing crucial information for researchers and educators involved in studying English language acquisition.

Pedagogical Implications

The pedagogical implications of this study are promising and show that by incorporating CSR into language instruction, educators can foster an enriched learning environment. Using a range of contextually relevant reading materials and specific reading strategies can promote reading comprehension skills among ELLs. Furthermore, utilizing these reading skills can empower learners to independently explore literary texts, which could culminate in a love for reading and language learning. As a result, learners will be better able to understand complex or academic texts, furthering their language competence and ultimately preparing them to be successful in various academic and real-world situations.

Future Research Implications

Additionally, the findings of this study can be expanded upon by researchers to investigate further the variables influencing the efficiency of reading comprehension capabilities of ELLs. Future research endeavors might refine the understanding of which specific components of the cooperative learning techniques are most impactful for improving ELL students' reading comprehension capabilities. Here are a few strengths of the present study to consider for future replication:

1. Pre-test-Post-test Design. Using a pre-test and post-test was a strength because comparing the two groups before and after the CSR and RT interventions was possible. This type of design controls for potential threats to internal validity, like maturation, history, and regression to the mean.
2. Quasi-Experimental Design. A quasi-experimental design was advantageous because it allowed for manipulating independent variables (CSR and RT) while controlling for potential threats to internal validity, such as selection bias and attrition.
3. Adequate Sample Size. A sample size of nearly 60 ELL 8th grade students was a strength because it provided a sufficiently large sample for statistical analyses, which can increase the generalizability of the findings.

Limitations

It is essential to acknowledge the study's limitations, which affected the generalizability of the findings. A more extensive and diverse sample, encompassing various geographic locations and educational settings, would have strengthened the reliability and validity of the results. Chiu and

McBride (2006), who sampled nearly 200,000 young learners across more than 40 countries, found results contradictory to those reported in this study.

In the current study, certain limitations need to be addressed and discussed. Internal validity is arguably the most important, as it refers to the extent to which the research design and methods allow for accurate conclusions about the relationship between the independent and dependent variables (Mills & Gay, 2016). In the context of this study, the relationship between the dependent variable (reading comprehension assessment scores) and the independent variable (CSR and RT interventions) was under examination. This study had several weaknesses to address:

1. Convenience Sampling. Convenience sampling was a weakness because it may have introduced selection bias. Students already assigned to classes may differ in essential ways from the broader population of ELL 8th grade students in Bangkok, Thailand.

2. No Control Group. The lack of a control group was a limitation because it made it difficult to attribute changes in language proficiency solely to the interventions implemented. With a control group, there may be alternative explanations for the observed changes, such as maturation, history, or testing effects.

3. Intervention Duration. The CSR and RT interventions were implemented for six weeks (not including pre-test and post-test), which was a limitation because more time may have been needed for the interventions to have a meaningful impact on language proficiency. A longer intervention period is encouraged and may have provided more robust results.

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