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**Research Paper**

**The Reciprocal Pedagogy: Effects on Students' Writing Proficiency Development in an EFL Classroom**

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**Abstract**

This study examined the effect of reciprocal teaching pedagogy on students' writing proficiency development in an EFL classroom. A pre-test post-test quasi-experimental design was employed. Two grade 11 intact classes, enrolled in the academic year 2023, were non-randomly selected from the school. A lot was cast to determine the Reciprocal Teaching (RT) and non-RT groups. The experimental group was assigned to the RT group and the control group was assigned to the non-RT group. Pre- and post-writing tests were conducted to collect data. Crosscutting issues were writing topics taken from Ethiopian Education national policy. The *Diederich analytical scale model* was used to evaluate the pre-and post-test results. Independent and paired-sample *t* tests were used to analyze and interpret data. The findings revealed that the successful application of meta-cognitive strategies resulted in a significant difference between the RT and non-RT writing classroom

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participants. The RT participants out performed in predicting, clarifying, questioning and summarizing the topic sentence, appropriate supporting details, listed relevant discourse markers, minimize grammatical errors, improve the overall content and organization of their writing in their RT discussion session. As a result, RT pedagogy can be utilized as an instructional tool to facilitate students' collaboration to improve their writing quality, and maximize EFL writing proficiency.

**Keywords:** Reciprocal Teaching, Writing Proficiency, Meta-Cognitive Strategies, Modeling

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## 1. Introduction

English is a crucial language in Ethiopia, serving as a major tool in education, media, business, tourism, and international relations. It stands alongside *Amharic*, the national language, and other local tongues, playing a vital role in government, public, and private sectors (Berhane, 2019). Importantly, English acts as the primary language of instruction in higher education and a bridge for international communication, allowing Ethiopia to engage with the world on a broader scale.

The current approach to teaching English is dependent on the specific needs of learners and the competence of teachers. While some educators advocate for providing students with input to memorize and encouraging them to solve problems independently, others believe that children can learn on their own. In this context, theories and practices of learning and thinking have highlighted the significance of reciprocal teaching (Dawit, 2011; Vygotsky, 1978). Reciprocal teaching is a widely utilized instructional strategy that involves a dialogue between the teacher and students regarding the content being studied. Research has demonstrated that this approach is effective in enhancing students' comprehension, critical thinking skills, as

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well as their reading and writing abilities (Palincsar & Brown, 1984). Furthermore, reciprocal teaching can be implemented across various subjects, including writing.

Lin and colleagues (2021) argue that reciprocal teaching writing involves students working together to improve each other's writing through a dialogue and feedback exchange. The process involves four key components: predicting, clarifying, questioning, and summarizing. In the predicting phase, students make predictions about the writing they are about to read or the writing they are currently working on. They use their prior knowledge and experience to anticipate what the text might be about, what the author's purpose might be, or what the main ideas or arguments might be. In the clarifying phase, students work together to clarify any unclear parts of the writing. They can ask each other questions, re-read sections, or explain difficult concepts to each other. In the questioning phase, students generate questions about the writing. These questions can range from simple comprehension questions to more complex analysis and evaluation questions.

In the summarizing phase, students work together to summarize the key points of the writing. They can use graphic organizers or other visual aids to help them organize and summarize the information. In addition to this, they may use their prior knowledge to sum up their writing.

Reciprocal teaching writing can be done in pairs or small groups. Students can take turns being the writer, reader, or discussion leader. The process encourages active engagement with the writing and promotes collaboration and peer feedback. Overall, reciprocal teaching writing is an effective way to improve students' writing proficiency while also promoting critical thinking, collaboration, and communication (Topping, 2017).

Writing proficiency is essential for academic success since it provides the basis for a substantial amount of learning in secondary school (Harmer,

2004). It has also been reported that individuals who write effectively tend to be smarter than their peers who do not write sufficiently (Hyland, 2002). If students cannot write at their appropriate grade level, they are unable to keep pace with the curriculum and usually leave with poor school qualifications. This is because students' ability to write a well-organized and coherent writing text in different social settings for various purposes, determines their failure and success to communicate. In order to enhance the writing proficiency of these EFL students, the current study proposed using a model based on the use of reciprocal teaching as the core unit of planning and instruction in language teaching.

In EFL classrooms, writing is crucial because it allows students to communicate effectively in various social situations with people from different backgrounds. The curriculum emphasizes writing through social interaction (Ministry of Education, 2012; 2018). This focus makes sense because writing is a core human behavior, as El-Murad and West (2004) point out. Our brains are wired for language learning through written words. Many learners, as Brown and Yule (1983) highlight, see writing as a key indicator of language proficiency. Students often measure their progress by their ability to write paragraphs or essays.

If students follow the procedures of RT carefully, they can develop their skills of reading and writing and ultimately become autonomous learners (Cárdenas & Pinzon, 2019). In this method, students not only become active participants in a lesson but also learn and share experiences from others. The instruction of RT, first by modelling whether they are teachers or parents, actors, peers or other care givers can play a balancing role between learners and activities, and between learners and social contexts, thus promoting the learning process, and teaching learners how to learn. Vygotsky (1978; 1986) emphasized students' constructive behavior and the significance of socio-

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cultural forces in influencing the learning environment for learners. Thus, the reason what students learn and grasp knowledge can be determined by where, when and how often (the frequency) one writes.

The difficulty of writing skills is partially the result of the focus on activities and the method teachers employed on formal features. Therefore, it is preferable to prioritize content qualities when writing a paragraph. As a teaching strategy for teaching writing, particularly at the paragraph and essay levels, the Process Writing Approach (PWA) is currently widely accepted and employed. To advance to a more difficult subject, like essay writing, secondary school students must first prove that they are proficient in paragraph-level writing (Graves, 1994).

Therefore, a well-written paragraph serves as a general indicator of a student's fundamental writing abilities, which affects the writer's academic performance. The students must produce a strong topic sentence, and then expand it into a comprehensive paragraph by using supporting sentences that lay out arguments for the thesis and relevant instances. Students still need systematic practice on writing a well-developed paragraph, which is the ability to articulate ideas with acceptable coherence and accuracy, even though they may be proficient in the target language (Hinnon, 2015)

According to Juzwiak (2012), weak paragraphs by students are often characterized by unrelated and inadequate topic sentences, weak supporting details, and unrelated and ineffective examples. This has led researchers to explore more effective approaches to teaching writing in English as a Foreign Language (EFL) classrooms, resulting in the proposal of several useful strategies. One such strategy is reading comprehension, which incorporates reciprocal teaching techniques (Palincsar & Brown, 1984). However, there is a lack of research conducted on the implementation of reciprocal teaching to enhance students' process writing proficiency specifically in the Ethiopian

EFL context. Notably, students' writing proficiency is primarily influenced by the teaching methods employed in the classroom (Cunningham, 1998). Therefore, it is recommended to utilize teaching methods that ensure the development of students' process writing proficiency. From a socio-cultural perspective, writing is considered a complex, mediated, distributed, and dialogic process of exploration and creativity. In this socio-cultural viewpoint, the incorporation of reciprocal teaching applications plays a crucial role in enhancing students' writing quality.

## **2. Statement of the Problem**

Most of the preparatory students in Ethiopia still find themselves unable to compose a paragraph to write. This difficulty might be due to the students' lack of knowledge of writing pedagogy and the method employed in the writing classroom to improve their composing abilities. In addition to this, using the language for written purposes is not satisfactory in most high schools. Learners' writing proficiency in EFL classrooms in Ethiopian schools is much lower than the level required of them (Abiy, 2012; Dawit, 2011). Moreover, the researcher has noticed the problem during his six years of teaching English at university. He has also observed that most students face problems in writing well-composed paragraphs for communication with their teachers, friends and others in the writing classroom. The researcher has also noticed the problem during his five years of teaching English at secondary schools in four different schools in different districts of the region. Similarly, the researcher has also used baseline data to see the skill of the students in writing proficiency of some selected students. The result showed that students have difficulties in writing tasks compared to the level they are expected to achieve. As a result, they do not have the required abilities to meet the academic demands in the level required.

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The study conducted by the Ethiopian National Educational Assessment and Examinations Agency (NEAEA) showed that grade four and eight students' English language proficiency is below the level required. The assessment confirmed that in English content domains, students scored 32.06% in writing, 33.12% in speaking, 34.32% in reading comprehension and 34.44% in grammar. The study relatively, shown that the score for writing was the lowest and for grammar was the highest. In this regard, they recommended that although the overall achievement in each content domain is seen to be below the basic proficiency level, more attention should be given to writing and speaking content areas (NEAEA, 2020).

Similarly, this assessment classified the students' proficiency level in terms of their region. The result depicted that grade eight students scored 32.81% achievement score in the regional level. This score is below (50%) the cut score target in the national education and training policy. This result influences the next grade level's English language proficiency development. As stated in the Education and Training policy Ethiopian students are expected to score a minimum of 50% achievement to promote from one grade to the next. However, the results achieved in both grades were found to be far below the policy target.

The text suggests that ineffective teaching methods might be a major reason behind students' struggles with writing. Hyland (2002) argues that good instruction is key to developing strong writers and preventing writing problems. In simpler terms, good writing instruction helps students learn from teachers, parents, or even peers. More broadly, it equips them with the tools to communicate important cultural knowledge and express themselves emotionally and intellectually.

Most studies on RT application were computed on reading, few studies were done on students' writing skills. For instance, Slater and Horstman

(2002), Cardinas and Pinzón (2019), and others studied RT application in an EFL writing classroom. Slater and Horstman in their study addressed the use of metacognitive strategies using reading one or two paragraphs and then write based on the text students read. The finding showed that extensive use of RT fostering strategies play a pivotal role in the pre-writing and composing phases of the writing process. Similarly, Cardias and Pinzon (ibid) in their action research suggested that assessing writing performance through portfolios was useful to enhance the teaching process because students engaged in their own learning and participated actively in the process. In this regard contributes for building confidence in the students and for developing their writing skills as they were able to improve their vocabulary spectrum, minimize grammatical errors, and improve the content, organization and punctuation of their writing.

As a result, this study aimed to empower students to become independent and effective writers. To the researcher's knowledge, to date, however, the effect of RT encompassing bases on the four cognitive strategies on students' writing proficiency has not been investigated in Ethiopian EFL writing classroom setting. Therefore, examining the effects of Reciprocal pedagogy on students' writing proficiency development was the main concern of this study. To address the research objective the following research question was raised:

What effects does reciprocal teaching instruction has brought on EFL students' writing proficiency development?

### **3. Literature Review: Theoretical Foundation of Reciprocal Teaching**

Research in social constructivism and cognitive psychology strongly supports the use of reciprocal teaching. This backing is important because it sets reciprocal teaching apart from less effective methods and gives a solid



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reason for using it. Social constructivism, a key theory behind reciprocal teaching, emphasizes how knowledge develops through social interaction. As Vygotsky (1978) famously said, "every function in the [student's] cultural improvement appears twice: first, on the social level, and later, on the individual level" (p. 57). This means that students learn skills through social interaction before fully grasping them independently.

Three fundamental presumptions make up this social genesis of knowledge construction: [a] knowledge and meaning are actively produced through socialization; [b] knowledge and meaning are social constructions, reflecting social negotiation and consensus; and [c] knowledge and meaning are created for social adaptation, discourse, and goal achievement (Gergen, 1999). In particular, reciprocal teaching is predicated on active socialization, both teacher-student and student-student interactions, where the knowledge that is constructed from the source material is negotiated within discourse communities and is not merely transferred from instructor to student. These three assumptions are presented in reciprocal teaching. Reciprocal instruction also promotes the instrumentalist belief that information should be put to use. In other words, reciprocal instruction emphasizes the significance of language in communication, understanding and action. The philosophical and theoretical foundations of reciprocal teaching in a writing context draw from constructivism, social constructivism, cognitive theories, and socio-cognitive theories (Vygotsky, 1986). The approach is rooted in the belief that learning is an active, social, and collaborative process, and it seeks to foster meaningful interactions and discussions to enhance students' writing abilities.

The prominent theoretical component derived from the constructivist point of view included in reciprocal teaching is scaffolding (Palincsar & Brown, 1984); a term that refers to the help that an expert provides to a

beginner through the use of discourse to model and explain cognitive processes. It is derived from Vygotskian developmental theory (Vygotsky, 1978). Each learner (i.e., the beginner) receives a different amount of scaffolding to accommodate individual differences. In order to make underlying processes overt, explicit, and tangible, the teacher should imitate the desired writing tasks (Brown & Palincsar, 1985). One factor related to poorer writers' challenge is the lack of composing a process paragraph may be their lack of explicit, overt composing effort (Myers & Paris, 1978).

A second important issue is how the expert's role modelling in the reciprocal teaching tasks for paragraph writing decreases over time. The waning of experimenter support between trials is a significant component of effective strategy transfer studies (Borkowski, 1985). As they deteriorate; learners take more responsibility for their own education.

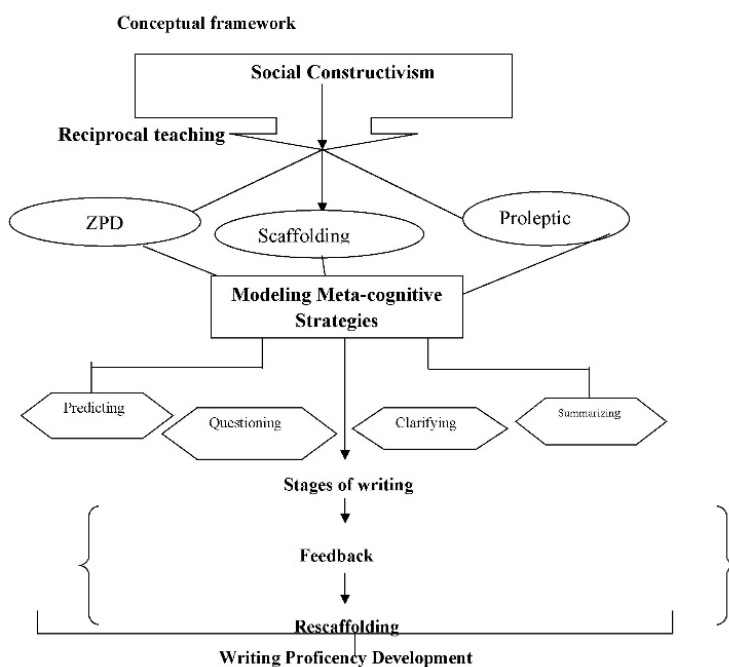
Active participation in learning is a third theoretical problem. Studies on the depth of processing ( Craik & Lockhart, 1972) explained that deeper involvement in tasks increases output and memory retention. The beginner is compelled to take on a more active teacher position in reciprocal instruction, which considerably increases the involvement in meaningful writing tasks. During the sessions of reciprocal instruction, there is a considerable improvement in the quality of the conversations between novice and expert.

The last important component of reciprocal teaching is the delivery mode of feedback to the learner relating to the effectiveness of the technique employed and, perhaps more significantly, relating to the usefulness or worth of employing a strategy in that situation. In this regard, research by Paris and his colleagues provides convincing evidence that understanding the value of a specific strategy is a prerequisite for strategy transfer and generalization (i.e., when to employ it, how to employ it, and how to monitor its success). In other words, reciprocal instruction shows that methods may and do affect

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writing a composition when applied actively in real-world writing circumstances.

According to Palincsar and Brown (1984), the three ideas that form the theoretical foundations of reciprocal teaching are social constructivism (Vygotsky, 1978), scaffolding, and proleptic teaching (Rogoff & Gardner, 1984).



*Figure 1.* Conceptual Framework

The researcher has endeavored to show the link between the theoretical and conceptual frameworks, the components of the conceptual framework and their connections; the trainer's modelling of the meta-cognitive strategies of the RT and the expected trainees' writing proficiency development. The researcher has applied ZPD, Scaffolding and Proleptic theories as background framework for the research for the details about the theories and

their links with RT and students' writing development. These theories are enmeshed with the four RT meta-cognitive strategies in that the trainer primarily scaffolds and models students' application. Of the four strategies, this is later superseded by the students themselves by peer scaffolding. The teacher and the students' scaffold are assumed to significantly enhance students' ZAD and achieve the ZPD.

The four RT fostering applications play key roles in the scaffolding process and ZPD. As stated above, the teacher introduces and models the application of the RT strategies which the students follow. Then students, on their side, peer scaffold the meta-cognitive strategies in different sequences by predicting the contents that are relevant to their writing, asking and answering questions about the language input (vocabulary, grammar, etc.) and content, clarifying the contents to organize them in their writing, and finally summarize all that they have done together. In every session of the RT alongside its meta-cognitive strategies they employ each stage of writing. Before the intervention, they will be encouraged to use their prior knowledge and experience in writing; and help to use the application of meta-cognitive strategies. During prediction, they brainstorm and predict alternative topic sentences, important words that are relevant to drafting, supporting details and other cohesive devices. The students are highly encouraged to use their prior knowledge in the process of applying the meta-cognitive strategies. In the post-intervention phase, the teacher gives feedback for each writing task. Based on the feedback, finally, they re-scaffold and rewrite their final version of paragraph/s. This modus operandi of the teacher and peer scaffolding and utilization of the RT meta-cognitive strategies in the process is expected to hone in on students' writing proficiency development.

#### **4. Methodology**

#### **4.1 Design of the study**

The study used a non-equivalent group pretest-posttest quasi-experimental design for two main reasons. First, the pre-test and post-test design helps establish that the intervention (reciprocal teaching, RT) caused any improvement in writing proficiency (the dependent variable). Second, the pre-test helps reduce selection bias by identifying any pre-existing differences between the groups before the intervention.

This design is particularly useful in educational settings where randomizing students into groups is often impractical. As Denscombe (2007) points out, quasi-experimental designs offer a practical alternative to true experiments when studying human behavior in educational contexts. The researchers view this approach as a strategic way to investigate the topic under controlled conditions with careful measurement (Bethlehem, 2009).

#### **4.2 Setting and participants**

This study was conducted at general secondary school in *Awizone*, Ethiopia. The school was selected purposively because of time and budget. A non-randomly selected participants were two sections of grade eleven students enrolled in 2023. In the school, the total number of students enrolled in the academic year was 4578. From these 457 students are grade eleven students assigned to nine sections[A-I]. This grade level was selected because, as compared to other grade level textbooks, grade eleven students' textbooks does not relatively encourage students to practice reciprocal teaching strategies like formulating predictions, posing questions, making clarifications and summary writing as well as cooperative writing. Therefore, having these grade-level students work reciprocally may sound rational in order to acquaint them with one another, develop a collaborative learning atmosphere and reduce their writing difficulties.

All the participants' age ranged between 17 and 19. To ensure the validity of the sampling process, a lot was cast to determine the RT and non-RT groups of the study. Before the research started, the RT learning group was briefed on the type and format of instruction they would receive. Furthermore, they were informed that they would also be participating in a research project. The participants were consented to participate in the program.

### **4.3 Instruments**

#### **4.3.1 Pre-test and post-test**

To avoid students getting bored, the researchers administered a pre-test two times over two weeks, with a one-week gap between each test. Eight weeks after the intervention (reciprocal teaching), they gave a post-test that are equivalent with the pre-test in length, content, and difficulty. This allowed to compare student progress. However, to minimize the influence of repeated testing on the results (testing threat), the writing lessons covered different topics and countries national issues. Great care was also taken to ensure the pre- and post-tests were reliable by paying close attention to how they were administered, scored, and constructed. Furthermore, the test topics were chosen to be relevant to the students' educational background, cultural background, gender, religious beliefs, and the difficulty level of their coursework. To ensure fairness, a senior TEFL teacher and supervisors evaluated the balance of the pre-test and post-test. Students were given ample time to complete each test.

The researchers acknowledged concerns that teacher grading can discourage students. To address this, they adapted the Diederich Analytical Scale Model rubric for high reliability. This rubric serves as both an analytical tool and a measure of student progress (Diederich, 1974; Nancy, 1989). The rubric focuses on three main areas: organization (weighted 50%),

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coherence (vocabulary, style, and flow - weighted 30%), and mechanics (capitalization, punctuation, and spelling - weighted 20%). Both the RT and non-RT groups received writing tasks before and after the intervention. These tasks were scored on a 1-to-5 scale based on specific criteria. Topics were similar to ensure growth could be measured.

After the intervention, a TEFL graduate student with a master's degree anonymously scored all papers using the Diederich model. The scorer didn't know student names, group affiliation, or whether the writing was a pre- or post-test assignment. The researcher oversaw testing to ensure a calm environment and minimize student anxiety. Finally, the internal consistency of the pre- and post-tests was calculated to check their reliability (Hatch & Lazaraton, 1991).

## **5. Procedures**

### **5.1 Procedure in the non-RT classroom**

In the non-RT group, the classroom teacher was taught on the contents of the issues (topics). The teacher taught the non-RT class for a similar time as an RT group did. To control the possible effect of tasks, the student's written assignments were corrected by the teacher; nonetheless, the students were asked questions each session to confirm their knowledge or understanding of the previous session's contents. Finally, the post-test similar to the RT group was given.

### **5.2 Procedure in the RT classroom**

The participating learners in the EG group, at their convenience, received the RT instructional task, which aimed to use the four multiple meta-cognitive strategies (predicting, questioning, summarizing and clarifying), in their writing session (Palincsar, 1986a). In addition to this, participants applied the stages of writing skills employed to develop a paragraph. In their activities the teacher first models and then they can follow the strategies of RT. They would apply the RT techniques in every task (Palincsar et al.,

1986). The application of the RT strategies was guided by the training material prepared by the researcher, which aimed to implement the meta-cognitive strategies throughout the writing tasks.

In each task, the researcher guided a discussion of the topic while exemplifying effective applications of the meta-cognitive strategies to writing tasks. The researcher invited students to ask questions about the topic and techniques while they were being discussed and modelled. This discussion was used by the researcher to promote writing and strategic thinking. Predicting, questioning, summarizing, and clarifying are the general cognitive strategies that were used throughout the writing tasks. However, the researcher starts to let students take on the position of teacher or dialogue leader as they become more comfortable with the dialogue process and the RT techniques. The teacher no longer acts as a leader but as a facilitator as the participants take the initiative to drive the RT discussion session.

### **5.3 Data analysis techniques**

The researcher compared the writing improvement of the RT group to the non-RT group. To do this, they analyzed the pre-test and post-test scores of the RT participants using descriptive statistics and compared them to the non-RT group's scores. They calculated average pre-test and post-test scores for each group by subtracting pre-test scores from post-test scores.

An independent samples t-test was used to see if there were significant differences in test scores between the two groups at both the pre-test and post-test stages (between-groups comparison). Additionally, a paired-samples t-test was used to see if there were significant differences in scores within each group before and after the intervention (within-group comparison).

### **5.4 Data analysis and findings**

The mean scores of the pre-and post-writing proficiency tests were compared using t-tests. First, the pre-test scores of the RT and non-RT group



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students were compared by independent samples t-test and the same testing type was employed for post-test scores. Eventually, the pre-and post-test scores of each group were compared using paired samples t-test. Along with this, descriptive statistics of the results were presented.

The comparison was between RT participants with non-RT participants. These groups were compared at the pre-and post-intervention phases to see any statistically significant differences or not. The results of the comparison of pre-test scores are presented in Table 1.

**Table 1.**  
*Independent samples t-test for pre-test scores*

Group		t test for Equality of means						
		N	Mean	SD	T	df	Sig.	Mean difference
Pre-test	RT	43	17.70	8.884	1.279	42	.204	2.06
	nonRT	41	15.63	5.389	1.294	40	.204	2.06

The table describes the writing proficiency scores of two groups: those who received reciprocal teaching (RT) instruction and those who did not (non-RT).

Before the intervention (pre-test), the RT group had a slightly higher average score (17.6977) than the non-RT group (15.63). However, this difference was not statistically significant, meaning it could be due to chance. This is confirmed by the independent samples t-tests ( $t_{(42)} = 1.279$ ,  $p > .05$  for RT and  $t_{(40)} = 1.29$ ,  $p > .05$  for non-RT), where  $p$  greater than 0.05 indicates no significant difference.

**Table 2.**  
*Independent Samples t Test Results for Post-Test Scores*

Group		t test for Equality of means						
		N	Mean	SD	t	df	Sig.	Mean difference
Post-test	RT	43	34.67	17.913	5.455	42	.001	16.479
	non RT	41	18.20	7.464	5.548	40	.001	16.479

The RT participants post-test score, ( $M = 34.67$ ,  $SD = 17.913$ ) was higher than the non-RT participants ( $M = 18.20$ ,  $SD = 7.4$ ). However, the extent to which these differences were significant or not need to be checked. Thus, an independent samples  $t$ -test was computed.

As it appears in the table, the independent samples  $t$ -test showed that a significant difference found between the scores of RT and non-RT learners because of the meta-cognitive strategies applied in the writing classroom,  $t_{(42)} = 5.45$ ,  $p < .001$  and the non-RT group  $t_{(40)} = 5.548$ ,  $p < .001$ . The independent sample  $t$ -test results revealed a strong and statistically significant difference which suggests that reciprocal teaching had a positive impact on student writing proficiency.

The substantial mean difference of the RT group scored 16.479 points higher on average than the non-RT group, indicating a meaningful improvement in writing proficiency associated with the reciprocal teaching intervention.

The substantial mean difference of the RT group scored 16.47 points higher on average than the non-RT group, indicating a meaningful improvement in writing proficiency associated with the reciprocal teaching intervention.

**Table 3.**

*Paired Samples t-Test Results (intra-group t-tests)*

		Paired Samples Statistics			
		Mean	N	SD	Std. Error Mean
Pair 1	Pre-test RT	17.70	43	8.884	1.3
	Post-test RT	34.67	43	17.913	2.7
Pair 2	Pre-test Non-RT	15.63	41	5.389	.84
	Post-test Non-RT	18.20	41	7.464	1.16

The paired sample  $t$ -test results offer valuable insights into the impact of reciprocal teaching (RT) on writing scores within the same group of students over time, as well as the lack of significant change in the non-RT group. The substantial mean difference in the RT group demonstrated a significant

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improvement from the pre-test (17.7) to the post-test (34.67), with a mean difference of 16.97 points. This suggests that the RT intervention had a strong positive influence on their writing proficiency improvements.

The minimal mean difference in contrast, the non-RT group showed a much smaller change from pre-test (15.63) to post-test (18.20), with a mean difference of only 2.57 points. This indicates that their writing performance remained relatively stable without the RT intervention.

Overall, the paired sample t-test results reinforce the notion that reciprocal teaching can be an effective tool for enhancing writing skills in the classroom. The substantial improvement within the RT group, coupled with the minimal change in the non-RT group, provides compelling evidence that the RT intervention played a significant role in the observed writing proficiency improvements.

**Table 4.**  
*Paired Differences of the Groups*

Groups	No.	Paired Differences			T	df	Sig.
		Mean	SD	Std.Error Mean			
Pre-test RT & Post-test RT	43	-16.9	13.7	2.09	-8.1	42	<.001
Pre-test Non-RT & Post-test Non-RT	41	-2.5	5.4	.855	-2.9	40	<.005

The table shows a clear difference in how the two groups progressed from pre-test to post-test. The RT group's average score on the post-test increased by 16.97 points, while the non-RT group's score actually decreased by 2.56 points compared to their pre-test scores.

Statistical analysis confirms that this improvement in the RT group is significant. A paired-samples t-test showed a statistically significant difference in writing proficiency for the RT group ( $t_{(42)} = 16.97, p > .001$ ). This means the increase in their scores is unlikely due to chance.

In contrast, the non-RT group did not show a statistically significant improvement. Their paired-samples t-test results ( $t_{(40)} = 2.56, p > .05$ )

indicate that the difference between their pre-test and post-test scores is not statistically meaningful.

Overall, these findings suggest that the significant difference observed in the overall post-test results (mentioned in Table 4) can be attributed to the improvement in the RT group's writing proficiency. In other words, the RT intervention appears to have had a positive impact on students' writing skills.

The paired differences for the RT group revealed statistically significant ( $p < .001$ ) increase in writing scores from pre-test to post-test, with a mean difference of -16.9. This negative value indicates a substantial improvement in writing performance after participating in reciprocal teaching.

The minimal change in contrast, the paired differences for the non-RT group show a smaller and less significant ( $p < .005$ ) change, with a mean difference of only -2.56. This suggests that their writing scores remained relatively stable without the RT intervention. Thus, the effectiveness of reciprocal teaching based on the results strongly suggests that reciprocal teaching can be an effective approach for enhancing student writing proficiency. The significant improvement within the RT group, compared to the minimal change in the non-RT group, supports the positive impact of reciprocal teaching on writing skills.

In general, the pre-and post-tests of the RT and the non-RT group indicate that results differ in the RT group has shown a significant difference between the pre-and post-test results. But the non-RT group has not shown difference in the computation between the pre-and post-test results.

## **6. Conclusion**

This study investigated the potential benefits of using reciprocal teaching (RT) with meta-cognitive strategies in a school setting to improve students' writing skills, particularly in English as a foreign language (EFL) classroom.

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The findings suggest that students who participated in RT showed significant improvement in the overall quality of their writing. Applying meta-cognitive strategies helped students improve the overall content and organization, unity and use of cohesive devices. Collaborative writing skills within the RT model further enhanced writing abilities in minimizing grammar errors and list appropriate supporting details in composing a paragraph.

The study builds upon Palincsar and Brown's (1984) theoretical and practical implications of the RT model by demonstrating cognitive improvement through meta-cognitive strategies. The results indicate that RT, combined with meta-cognitive strategies, can be effectively implemented in secondary school EFL writing classrooms.

Overall, the study provides evidence that incorporating RT with meta-cognitive strategies into language classrooms, particularly for EFL writing instruction, can be a valuable tool for improving students' overall writing quality and collaborative learning experience.

### **7. Implication for Further Research**

This study mainly focused on examining the efficacy of RT pedagogy on students writing proficiency development so that quantitative research method was employed. Palincsar and Brown's (1984) RT fostering strategies have too little extent been examined in this research. However, these findings need to be further backed by detailed qualitative data. Thus, further replication is demanded with a wider scale and randomized sample as the sample in this study was rather limited and the intervention duration was short. Similarly, it can also be possible to investigate the application sequences of the RT strategies (predicting, questioning, clarifying and summarizing) to be implemented in EFL writing classrooms. At large, it could be very important to study the effect of RT instruction on other skills.

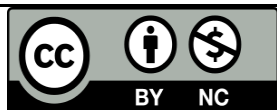
The contribution of the RT model to enhance EFL students' critical thinking in the writing classroom will be an area to be investigated further. It is also possible to look into the type of feedback that will be best suited to implement in the RT writing classroom. Tailoring instruction and adapting reciprocal teaching methods to meet individual student needs and learning styles can maximize its effectiveness in diverse classrooms.

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