

## Research Article

# Effects of Explicit Reading Strategy Instruction on Grade 9 Students' Achievement in Reading Comprehension

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The main objective of the study is to investigate the effects of explicit reading strategy instruction on students' achievement in reading comprehension. In two intact classes, the treatment group received reading lessons accompanied by the three basic reading instructions, i.e., the pre-, the while, and the post-reading instructions through explicit reading strategy instruction, but the nontreatment group received reading lessons in the usual way of learning/teaching reading. The study employed an embedded design since data were collected using quantitative data-gathering instruments through reading comprehension tests before and after the intervention, and an interview was also employed to gather data about the treatment from the randomly selected participants from the treatment group. Statistical results were analyzed with an independent sample *t*-test and paired sample *t*-test from nontreatment (33) and treatment (35). The findings emphasized the importance of employing explicit reading strategy instruction in enabling readers to comprehend reading comprehension questions, especially it lets students properly handle reading comprehension questions that seek higher level thinking. On the top priority, to be good readers at comprehending reading comprehension questions that seek higher level thinking, classroom reading teachers are required to create opportunities for the readers while delivering reading lessons by presenting activities that go with the pre-, while, and post-reading instructions. Being one of the most important instructions in reading lesson presentations, secondary school language teachers are expected to present reading lessons through explicit reading strategy instruction.

## 1. Introduction

In today's dynamic setting, of the four language skills, the knowledge of reading plays the most important role in English as a foreign language (EFL) classes of any educational level [1]. Probably, that is why scholars, for example [1, 2], have contended that reading is something readers take for granted and often thought of as a hierarchy of skills that take a high position in one's own life, opening up access to better jobs, and opportunities to join international organizations. Scholars like Grabe and Stoller [3] argued that the position of reading in the social order is quite multifaceted. So, a few explanations are considered necessary to position the role of reading and student learning. In most cases, people read with what appears to be little effort and little planning. In the first decade of the twenty-first century, it was remarkable that more than 80% of the population in the

world could read [1]. Readers read many types of texts: some that the readers consciously intend to read, and some that readers immediately give the impression to pick up.

To make the scrutiny of reading clear to readers, reading scholars have outlined theories of reading. For example, basal reading instruction and phonics teaching—which is rooted in behaviorist theory, focuses on the teaching of specifics of reading—letter-sound association and decoding words [4]. The move continues to settle the dynamic change about the controversy regarding reading. The new comprehension paradigm which was emerged during the 1990s sees readers as meaning builders and comprehension failure fixers [2] and extends studies of strategy instruction to consider authentic activities, teacher–student interaction, and letting students control the strategies to fix up comprehension failures [5].

By the same token, the whole language movement brought together all constructivists' trends of reading comprehension,

literature-based reading, and integrated instruction by incorporating them into its fundamental set of principles and practices [2]. The proponents of the whole language movement have shown the mismatch between the nature of reading being advocated within the research community, the practice being stipulated by the concerned individuals and the way reading is practiced, and implemented in the actual teaching of reading comprehension of the previous era [6, 7]. Presumably, it is for such reasons that the whole language movement has brought a new issue, particularly comprehension instruction with the strong prominence on the authenticity of the text and tasks and with a strong disdain for skill instruction [8]. The very focus of the whole language movement, in reading comprehension instruction, was largely through classrooms and occasional minilesson in which different activities are employed. For example, in a reading lesson classroom, a reader is expected to make meaning (prediction) or repair (clarifying unknown words through context).

Researchers have continuously searched for an effective instructional framework to improve students' reading comprehension skills [9]. Such reading instruction frameworks are demanded in a more formal setting where readers are expected to read in an academic context. To glean meaning from the text, a reader needs to get support through reading strategy instructions. For this subject, various reading comprehension models have been devised to make clear how reading comprehension works. All those models have been influenced by ESL/EFL reading theory and instructional practices.

Various scholars (for example, [2, 10–13]) have explained the importance of reading comprehension instruction in enhancing students' reading comprehension skills. If reading comprehension instruction plays a vital role in enhancing students' reading comprehension skills, teachers are expected to employ explicit reading strategy instruction to let learners comprehend a given reading text designed for their grade level. Scholars, for example, Westwood [14] suggested that "discontinuities" between teachers and students are a possible explanation for students' difficulties with comprehension activities. These discontinuities refer to the language barriers, the lack of strategies to employ reading that exists between a learner's current status and the environment, and the lack of proper reading comprehension instruction; for example, teachers may lack the necessary skills to employ reading comprehension instruction.

Regarding this, Bernhardt [15] explained that teachers are authorized individuals to enable and teach learners how to comprehend at greater levels of sophistication, and whether reading ability can be enhanced by instruction has yet to appear. This reading comprehension instruction includes both explicit instruction of specific comprehension strategies and using a great deal of time, which allow reading comprehension instruction prereading, reading comprehension instruction during reading, and reading comprehension instruction after reading. If comprehension is bridging the known information and newly found information, the knowledge of reading comprehension instruction is critical to help students cultivate their reading skills in reading comprehension. Students with good reading comprehension can master their academic

learning with ease. Many researchers (for example, [16, 17]) have emphasized the importance of reading comprehension instruction in cultivating students' reading comprehension. Scholars have also indicated that effective interventions are needed to help readers increase their ability to comprehend reading texts [18–22].

The purpose of the study is, therefore, to check whether explicit reading strategy instruction that was employed by the classroom reading teacher contributed to students' achievement in reading comprehension or not. To achieve this purpose, the researchers adapted a reading passage from which reading comprehension questions were prepared. This was done to check whether the reading strategy instruction employed by the teacher brings significant improvement in the treatment group students' achievement in reading comprehension or not. To see the improvement on the ground, the researcher prepared reading comprehension questions from the reading passage based on the strategies to be used by the students to read and answer reading comprehension questions. The researchers prepared the questions based on the level of thinking the students were required to answer, that is, questions that offer students to answer the questions through higher level thinking (21 items) and questions (18 items) offer students to answer these questions through lower level thinking processes.

## 2. Statement of the Problem

Grade 9 students at Gute Secondary School suffer from poor reading comprehension. In the meantime, they show poor reading comprehension performance when they are provided with reading comprehension questions.

## 3. A Review of Related Literature

Many studies have widely used both quantitative and qualitative data-gathering instruments to examine the effects of reading strategy instruction on students' achievement. The following will be a brief discussion of studies related to reading strategy instruction. For example, globally, Rouijel et al. [23] investigated whether explicit instruction of critical thinking skills can impact students' ability to use higher order thinking skills in reading comprehension of EFL preparatory students. The study particularly focuses on the instruction of critical thinking in its evaluative dimension and measures the impact on the development of three thinking skills, namely, *understanding*, *analyzing*, and *evaluating*. The EFL preparatory class students in the experimental group ( $n = 27$ ) were trained in using two of these skills for reading comprehension, whereas those in the control group ( $n = 29$ ) took their normal classes. The results of the study showed that the experimental group significantly improved between the pre- and post-tests and outperformed their control counterparts. These results confirm the hypothesis claiming that high-order thinking skills are teachable.

Lyons [24] also conducted a study on the effects of prereading instructions on comprehension of science texts. Her study employed three different prereading instructions (treatments) to see the effects of prereading instruction on

students' comprehension. The study made a comparison of the three treatments and found that generic instruction and structure–function instruction led to better learning outcomes, measured by a recall, short-answer performance questions, and traditional multiple-choice and short-answer assessment. The results of her study suggested the possibility that relevant instructions targeting core ideas may help to orient students to key ideas and explanations in scientific texts, especially for higher skilled readers, and indirectly highlight some of the challenges for students with less reading competencies. Overall, her study highlighted greater insight into how middle-school students read science texts, the effectiveness of instructor-provided relevance instruction in promoting (higher level) comprehension of science texts, and implications for teachers on how to use text in science instruction.

Although Lyons' study did not consider the while reading and the postreading instructions, it could be used as a benchmark for the current study since it relates instruction to comprehension. Thus, the researcher argues that to completely understand the effects of reading strategy instruction on students' comprehension not only the prereading instruction but also both while reading and postreading instruction need to be included in the instruction to examine the full-fledged effects of reading strategy instruction on comprehension.

Kassem [13] conducted a study on developing English majors' comprehension of literary texts and online self-regulated learning skills via Literature Circles 2.0. The study targeted enhancing students' ability to plan, monitor, and evaluate their online learning and digitalized the literature circles model and investigated its impact on developing English majors' comprehension skills of literary texts and online self-regulated language learning skills in an EFL context. Test of literary reading comprehension skills and online self-regulated language learning skills questionnaire was used as data-gathering instruments. Sixty English majors who were divided into the control and experimental groups were participated in the study. The control group studied the course using the traditional teaching method, teacher-centered, which relies on lecturing, whereas the experimental group studied the same course using Literature Circles 2.0, whereby students worked autonomously in an online virtual environment. The study results revealed the significant effect of Literature Circles 2.0 on developing the student's comprehension of literary text as they were demonstrated to be involved personally and emotionally in the active learning process of the course. Meanwhile, the students in the experimental group displayed a significant mastery of the online self-regulated language learning skills. Based on the students' significant improvement in processing, comprehending, and extracting the meaning of literary texts, the study concluded that Literature Circles 2.0 proved to be an elective approach to promoting students' comprehension of literary texts. Therefore, the study conclusively recommends the use of Literature Circles 2.0 in teaching such texts. This study differs from the present study that it did not touch on the effect of explicit reading strategy instruction on students' achievement in reading comprehension. The study was conducted at university level English majoring students,

whereas the current study focuses on secondary school students' achievement.

The studies conducted by Chaveesuk et al. [25, 26] revealed that perceived ease of use, satisfaction, attitude, and social distancing have effects on continuous intention to use their reading ability in the marketing perspectives of behavioral intention and the actual use of digital payment solutions as electronic innovation for retail purposes in Thailand. A questionnaire was used to gather data from the respondents. Both studies intended to minimize the physical contact between retailers and customers during COVID-19, but it directly helped the customers' ability to read and comprehend since they are required to read, comprehend, and understand to answer the specific items in the questionnaire and read the instruction to use digital payment systems as a means of payment in retail purchase individually. Therefore, both studies are related to the current study since perceived ease of use, satisfaction, attitude, and social distancing matter to enable readers able to read and comprehend a given text independently.

Locally, Chanyalew and Abiy [27] conducted a study entitled "Effects of Teacher Scaffolding on Students' Reading Comprehension in Dona Berber Primary School, Ethiopia" to examine changes in students' reading strategies and reading comprehension as a result of teacher scaffolding. In their study, a quasi-experimental pre- and post-tests research design was employed in which a separate prereading and postreading comprehension test, two structured classroom observations and focus group discussion were used as data-gathering instruments. The findings indicated that scaffolding reading strategy instruction is effective in improving students' passage reading comprehension. It is recommended that training on scaffolding reading strategy needs to be given to English language teachers and students.

Some other reading scholars (for example, [13, 19, 28–31]) conducted studies on reading at universities and their claims show that they refer that students' language skills are not well cultivated in elementary and high school; especially, their reading comprehension skills—the core for other academic subjects—that is the reason students who join university seem to be inefficient to read and comprehend a given reading text. Even, their analysis further implies that a great effort is needed to be made in the elementary and high school reading comprehension instruction curriculum to improve students' reading comprehension skills. The following research questions were derived based on the existing literature analyzed:

- (RQ1) Is there a statistically significant difference between the mean scores of the treatment group and the nontreatment group on the pretest concerning students' achievement in reading comprehension?
- (RQ2) Is there a statistically significant difference in students' achievement in the posttest reading comprehension mean scores between grade 9 students who received explicit reading strategy training (treatment group) and those who learned reading through the usual method (nontreatment group)?

- (RQ3) Is there a statistically significant difference between the mean scores of the nontreatment group on the pretest and posttest about students' achievement in reading comprehension?
- (RQ4) Is there a statistically significant difference between the mean scores of the treatment group on the pretest and posttest concerning students' achievement in reading comprehension?
- (RQ5) Is there a statistically significant difference in the mean score of each subskill of reading comprehension between the treatment and nontreatment groups after the intervention was provided?
- (RQ6) How do the participants in the treatment group reflect on their experience, when they are provided with explicit reading strategy instruction?

#### 4. Theoretical Framework

Constructivists' proponents give a broader room for readers who construct meaning from text. In this theoretical instance, meaning construction occurs when a learner actively engages in the reading process. For them, a learner integrates the new knowledge (knowledge to be learned) with his/her prior knowledge so that she/he can achieve her/his learning. Constructivist theory believes that individuals seek an understanding of the world in which they live and work. Constructivist learners "create meaning," "learn by doing," and "work collaboratively" in mixed groups on common projects. Individuals develop subjective meanings of the meanings of their experiences directed toward certain objects or things. Such meaning makings are varied and multiple, leading the reader to look at the complexity of views rather than narrowing meanings into a few categories or ideas [32].

In the context of the above explanation, the role of the learner is much emphasized in a reading lesson. For example, a learner is expected to construct, interpret, infer, analyze, and evaluate a given reading text. Learners are viewed as active individuals who construct knowledge and comprehend meaning through reading processes involving discovery, interpretation, and evaluation of the text. In this case, meaning is eventually negotiated which requires social and cooperative actions in which learners generate multiple interpretations. For the constructivist, knowledge and truth are constructed so that learners construct their knowledge by actively being involved in the learning situation [14, 33, 34]. In this way, it is believed that a reading classroom is not a place where teachers impart knowledge and the students passively receive the knowledge, but it is a place where reading can be practiced through the transaction among the reader, the text, context, and activity.

Consequently, a teacher serves as a facilitator in the constructivist viewpoint where both the classroom reading teacher and students are expected to learn from each other. Rather than transmitting knowledge to students, teachers collaborate with students to create knowledge and understanding in their social contexts. This implies that the classroom reading teacher's culture, values, and prior understanding

have a great role in the interaction that may occur between learners and the task so that meaning could be constructed by the learner.

Furthermore, the interaction can reasonably happen between the reader, the text, and the activities provided that explicit reading strategy instruction is carried out effectively. It could be that is why, Duffy and Jonnassen [35] claimed that constructivist instructional developers and classroom reading teachers should create a conducive environment to teaching/learning contexts for learners to construct meaning through the transaction. In this regard, reading can be reasonably viewed as a dynamic and complex phenomena—in which learners conceptualize, extract, and interpret the text.

The constructivist approach asserts that learning is a socially interactive process, in which learners construct new knowledge based on their prior experiences and current knowledge [36]. This indicates that higher mental functions, such as rational thought and learning, originate in social activities. The process in which this knowledge develops in such social activities is very complex and dynamic. This knowledge develops via the negotiation of meaning in the target language and within the in-built sociocultural expression. Exposure to and interaction with language and context extend successful language learning. Typically, a learner with a constructivist view of learning would be required to read a given reading text and solve problems, interact, synthesize, critique, and evaluate at a high level of interaction. Such meaning construction could come from the reader's involvement with the text situation, text types, and activities, which could be closely tied to the constructivist philosophy of reading comprehension instruction [37, 38].

In reading comprehension instruction, the constructivist views of reading place a high position [2, 10, 34] in the EFL classrooms for the teaching of reading. The constructivist view of reading has many implications for language teachers [37]. First, teachers need to stop teaching reading by simply practicing reading, but need to focus on assisting students through explicit reading strategy instruction to extend students' capacity to read. Second, teachers need to stress and follow the procedures of teaching reading than simply using their accustomed teaching method. Third, English language teachers need to show how learners build good reading skills; when and why to use the strategies, and how to fix up their comprehension failures.

To conclude, the constructivist theory challenges the fore-runner theories about knowledge and learning. It invites a learner to be self-directed and interact with the intention that learning is a socially constructive way of gaining knowledge and insight. It gives a critical role to learners' experience, background knowledge, and interaction with the text, activity, and context to construct, comprehend, and develop new ideas in a reading lesson. Again, the constructivist developers support the idea that one can read and understand if reading strategy instruction is carried out. Hence, it creates motivated and independent readers. As a result, they can construct and develop new knowledge and insights from the reading text.

The constructivist learning theory could be the base for the current study under investigation since explicit reading



strategy instruction focuses on enabling learners to construct and comprehend meaning which is either explicitly stated or implied by the author. Besides, it lets the learner produce or develop another idea based on the context provided. Constructivist proponents argue that learners should actively construct meaning from the text in the context in which they exist. In other words, readers analyze, interpret, and shape their prior knowledge and new information into a new understanding [38].

This theory emphasizes connecting or integrating how students understand, organize, and figure out new information. The constructivist perspective supports the view that validates the importance of scaffolding for learners of L2/foreign language. According to Gray [39], constructivism is a view of learning based on the belief that knowledge is not a thing that can be simply poured into the students. Rather, it is a learning theory that views knowledge—constructed by the learners through active involvement, a mental process of development; learners are considered as the creator and builders of new meaning and knowledge.

As applied to the present study, this theory holds that the present researchers would expect the independent variable (explicit reading strategy instruction) to influence students' reading comprehension ability because the constructivist view of the reading process conceives the reader as an actively engaged participant who uses a variety of prior knowledge and the reading strategies learned to frequently interact with others as she/he constructs meaning from the reading text.

## 5. Research Gap

Currently, secondary school students' achievements in reading comprehension, in the Ethiopian context, are drastically decreasing from time to time. In other words, if students are asked to comprehend a given reading text, inevitably, they exhibit poor reading comprehension. Reports from secondary school teachers, experts, parents, and stakeholders suggest that many students after attending 8 years of instruction in the English language are unable to understand a given reading text. Furthermore, local research has continued to show that the reading comprehension ability of students in Ethiopian secondary schools is below the expected standard [40–43]. This calls for an urgent need to improve students' reading comprehension unless if it continues, it is detrimental to students' academic success.

To the best of the researchers' knowledge, none of these studies examined the effects of explicit reading strategy instruction on secondary school students' achievement in reading comprehension. No one tried to check the effects of explicit reading strategy instruction on students' achievement in reading comprehension in EFL classrooms (in the local context, Ethiopia). Therefore, this study attempts to fill in the gaps, i.e., students' failure to work on and answer reading comprehension questions, hoping that explicit reading strategy instruction could contribute to the student's reading comprehension development. Consequently, the researchers were inspired to examine the effects of explicit reading

strategy instruction on students' achievement in reading comprehension.

## 6. Research Methodology

This study aimed at scrutinizing the effect of explicit reading strategy instruction on grade 9 students' achievement in reading comprehension. Hence, the embedded design was employed because the design helps the researchers to integrate the quantitative data with qualitative data. Just to come up with better findings and conclusions, the present researcher primarily focused on an intervention-based study that involved a treatment group and a nontreatment group. According to Creswell [32], the embedded design gives room for the researcher to collect qualitative data to augment the intervention study.

*6.1. Research Setting and Participants.* The present study targeted grade 9 students at Gute Secondary School of East Wollega Zone. Grade 9 students were taken as the population for the study because the researcher believed that grade 9 students are exposed to learning to read from grades 1 to 4, and in the next stage, that is, from grades 5 to 8, students partially transfer the way “learning to read” to “reading to learn.” Therefore, beyond grade 8, students are expected to comprehend a given reading text accordingly [44], and students are expected to explore the text-to-text, text-to-self, and text-to-world they are living in [1, 3]. Therefore, the selection of the grade level is purposive because it is believed that grade 9 students are acquainted with reading and the principles of reading to learn until the completion of grade 8. This way, the researchers apply the purposive sampling technique to select the school and the grade level as it is the most effective when one needs to examine a specific domain [45]. Consequently, it is assumed that it may not be difficult to examine the effect of explicit reading strategy instruction on grade 9 students' achievement in reading comprehension.

It was very difficult to let involve all grade 9 students in Gute Secondary School because the study employed an intervention to examine the effect of explicit reading strategy instruction on students' achievement in reading comprehension of the treatment group. Hence, the researchers randomly selected sections C and D with 33 students (nontreatment group, section C) and 35 students (treatment group, section D). Consequently, explicit reading strategy instruction was provided for the treatment group, and the usual way of teaching reading (without employing the three basic reading instructions, and reading comprehension lessons) was provided to the nontreatment group.

*6.2. Research Instruments.* Quantitative data were gathered through tests (pretest before intervention and posttest after intervention). Qualitative data were gathered through a retrospective interview of the participants in the treatment group to obtain more robust findings.

*6.2.1. Tests.* In the present study, pretest and posttest were used as the main data-gathering instrument. The students started with the standardized reading comprehension test (Florida Comprehensive Assessment Test (FCAT)) grade 9

reading by Ortiz and Davenport [46]. These tests are available online at [https://www.fldoe.org/core/fileparse.php/3/urlt/fl540182\\_gr9rdgstm\\_tb\\_wt\\_r2g.pdf](https://www.fldoe.org/core/fileparse.php/3/urlt/fl540182_gr9rdgstm_tb_wt_r2g.pdf). This website notes that grade 9 reading FCAT test includes questions that include different subskills of reading. The reading comprehension questions which were prepared were based on the activities and exercises designed in the training manual.

After administering a pretest to the treatment and the nontreatment groups, treatment was given to the experimental group students through explicit reading strategy instruction for 9 weeks (from February 16, 2021 to April 16, 2021). After the completion of the intervention, a posttest which is identical to the pretest, chosen from Florida Comprehensive Assessment Reading by [46], was prepared and administered to determine whether or not there was any improvement achieved over the pretest results of each group and to know if there was any significant difference between the posttest results of the experimental and control groups. This is based on the idea that [33, 47] forwarded regarding administering the same test twice. In their work, they have indicated that it is appropriate to administer the same test after a period of at least 3 weeks, so the posttest was administered on the 9th week.

The test consisted of four reading comprehension passages from which 39 questions were developed. The reading comprehension questions comprised various subskills of reading to be assessed. These are nine questions asked a reader to answer questions that bear explicitly stated ideas, two questions asked a reader to fill in the blank spaces, two questions inquired a reader to put ideas in order, three questions asked a reader to answer reference questions, and eight questions offered a reader to guess the meanings of new words, eight questions asked a reader to search for specific ideas, four questions asked a reader to state the main ideas of the text, one question offered a reader to evaluate the text, and finally two questions asked a reader to answer inference questions. The main objective of the posttest was to check whether employing explicit reading strategy instructions brought any significant differences in the mean scores of the treatment group and the nontreatment group in their reading comprehension posttest on each subskill of reading or not.

*6.2.2. Retrospective Interview.* In this research work, a retrospective interview was used to have respondents recollect and report the thoughts that they had in mind about the strategy instruction they received and the improvement observed in their achievement in reading comprehension. In this way, the researchers examined the nexus between explicit reading strategy instruction and students' achievement in reading comprehension after task performance [48]. The researchers interviewed the respondents about the importance of strategy instruction and whether their achievement in reading comprehension was achieved due to the intervention or not.

*6.3. Procedures of Data Collection.* The quantitative and qualitative data were gathered concurrently. The quantitative data (Reading Comprehension Test) were collected before the intervention started and after the intervention.

The intervention continued for 9 weeks in which the classroom reading teacher presented reading lessons accompanying the three basic reading instructions (pre-, while, and post-reading strategy instructions) with adapted activities to the treatment group, whereas the reading passage and the activities in the student's textbook were presented through the usual method of reading lesson presentation to the nontreatment group.

The qualitative data were collected through retrospective interviews to have respondents recollect and report the thoughts that they had in mind about explicit reading strategy instruction they received during reading lesson presentation and their achievement in reading comprehension.

*6.4. Methods of Data Analysis.* The quantitative data gathered through reading comprehension questions before the intervention and after the intervention were analyzed using descriptive statistics and inferential statistics. For the descriptive statistics, mean score ( $M$ ) and standard deviations ( $SD$ ) were employed. The mean score was calculated to indicate the arithmetic average of each group and to approximately see the difference between the treatment and the nontreatment in their test scores. The standard deviation was computed to examine the average distance of all scores in the distribution from the mean for each.

Regarding the inferential statistics, the researchers employed independent sample  $t$ -tests to compare and determine the differences in the mean scores of the pretest of the treatment group and the nontreatment group, and posttest of the treatment group and the nontreatment group to address the first and second research questions, respectively; and a paired sample  $t$ -test (matched-pair  $t$ -test) was employed to determine the differences of the mean scores of the pre- and post-tests of the same group, i.e., the treatment group in which the same data were collected twice, and for the nontreatment group, too to address the third and fourth research questions, respectively. Furthermore, the mean score for each subskill of reading comprehension performance was also calculated to examine which subskills of reading comprehension were improved after the intervention provided to address the fifth research question.

*6.5. Results and Discussion.* This section presents the analysis results of both quantitative and qualitative data gathered through tests and retrospective interviews, respectively. The quantitative data (Reading Comprehension Test) were gathered and analyzed to address the research question, "Is there a statistically significant difference between the mean scores of the treatment group and the nontreatment group on pretest concerning students' achievement in reading comprehension?" The quantitative data were analyzed employing descriptive statistics and inferential statistics tests: a paired sample  $t$ -test to examine the within-group difference after the intervention and an independent sample  $t$ -test to examine the effect of the intervention provided to the treatment group on students' achievement in reading comprehension scores. Furthermore, the qualitative data gathered through retrospective interviews were analyzed using an edited verbatim transcription method to look at how the intervention

TABLE 1: Independent samples *t*-test results for the treatment group and nontreatment group on preintervention test.

Group	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	Sig. 2-tailed
Nontreatment	33	21.66	4.82	0.250	66	0.083
Treatment	35	21.34	5.77			

exerted change on enhancing the treatment group's achievement in reading comprehension.

Regarding the quantitative data analysis, the mean (*M*) and standard deviation (SD) of the descriptive statistics were calculated and depicted in Table 1. The results were also interpreted based on the mean score and the standard deviation. The mean scores had a slight difference (nontreatment:  $M = 21.66$ ; treatment:  $M = 21.34$ ), both the nontreatment group and the treatment group's mean scores in the reading comprehension test were the same. However, after the intervention, the results of the descriptive statistics for the posttest mean scores revealed that there was a big numeric difference between the treatment group and the nontreatment group participants' achievement in reading comprehension mean scores after the intervention (nontreatment:  $M = 22.24$ ; treatment:  $M = 30.45$ ), and the treatment group's mean score exceeded the nontreatment group in 8.21 mean scores in the reading comprehension posttest. In the SD results of the pretest, the score deviates  $\pm 4.8$  and  $\pm 5.7$  for the nontreatment and the treatment group, respectively. The SD results for the posttest also revealed that the scores in the nontreatment group and the treatment group deviated  $\pm 5.3$  and  $\pm 7.3$  from the intervention mean scores, respectively. This revealed that the scores in the treatment and nontreatment groups were approximately dispersed from the mean scores equally both before and after the intervention.

(RQ1) Is there a statistically significant difference between the mean scores of the treatment group and the nontreatment group on the pretest concerning students' achievement in reading comprehension?

As indicated in Table 1, before the intervention, the descriptive statistics showed that although the mean scores had a slight difference (nontreatment:  $M = 21.66$ ; treatment:  $M = 21.34$ ), both the nontreatment group and the treatment group's mean scores in the reading comprehension test were the same. The independent sample *t*-test conducted shows that the *t*-value is 0.250, the *p*-value = 0.803, which is greater than the alpha value of 0.05; in effect, the mean difference is not significant at an alpha value of 0.05 ( $t(66) = 0.250$ , since an alpha value (*p*) is less than the sig. value (0.803)). Consequently, the result of the pretest indicates that the treatment group and the nontreatment group students had similar background in answering reading comprehension questions prepared from a reading passage before the intervention; therefore, we can say that there is no statistically significant difference in the mean scores of the reading comprehension test between the subjects in the nontreatment group and the treatment group before the intervention since  $p = 0.803$  which is  $> 0.05$ .

TABLE 2: Independent sample *t*-test results of the treatment group and the nontreatment group on posttest.

Group	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	Sig. 2-tailed
Nontreatment	33	22.24	5.35	-5.240	66	0.000
Treatment	35	30.45	7.35			

Thus, to examine whether employing explicit reading strategy instruction improves students' achievement in reading comprehension or not, an intervention was conducted for 9 weeks. The *t*-test result of the intervention is discussed in the following section.

(RQ2) Is there a statistically significant difference in students' achievement in the posttest reading comprehension mean scores between grade 9 students who received explicit reading strategy training (treatment group) and those who learned reading through the usual method of teaching reading (nontreatment group)?

As indicated in Table 2, after the intervention, the descriptive statistics showed that the big mean score difference between (nontreatment:  $M = 22.24$ ; treatment:  $M = 30.45$ ) and the treatment group's mean score exceeded the nontreatment group by 8.21 mean in the reading comprehension test. An independent sample *t*-test was conducted to see whether there is a statistically significant difference occurred in the reading comprehension test mean score of the nontreatment group and the treatment group or not. As can be seen from Table 2, the difference between the two scores was found to be statistically significant, which indicates that the treatment group made a significant improvement on their posttest compared to that of the nontreatment group. Hence, the *t*-test equality of means ( $t(66) = -5.240$ ,  $p = 0.000$ ) shows that there was a statistically significant difference in the students' reading comprehension achievement mean score of the nontreatment and the treatment group in the posttest. It could, therefore, be noted that the treatment group students performed significantly on the posttest when compared to the nontreatment group students. The finding is in line with Rouijel et al.'s [23] study that the study favored higher order thinking skills are teachable which was why the participants in the treatment group outperformed better in the reading comprehension posttest than the nontreatment group.

(RQ3) Is there a statistically significant difference between the mean score of the nontreatment group on the pretest and posttest about students' achievement in reading comprehension?

As indicated in Table 3, after the intervention, the descriptive statistics showed that although the mean scores had a slight difference (nontreatment before the intervention:  $M = 21.66$ ; nontreatment after the intervention:  $M = 22.24$ ), both before the intervention started and after the intervention was conducted, a big mean score difference was not observed in the nontreatment group's mean scores in the reading



TABLE 3: Paired sample *t*-test of the nontreatment group.

Group	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	Sig. 2-tailed
Nontreatment	33	21.66	4.82	-1.479	32	0.149
Treatment	35	22.24	5.35			

TABLE 4: Paired sample *t*-test results of the treatment group.

Group	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	Sig. 2-tailed
Nontreatment	33	21.34	5.77	-14.66	34	0.000
Treatment	35	30.45	7.35			

comprehension test. A paired sample *t*-test was conducted to see whether there is a statistically significant difference within the nontreatment group students' pre- and post-tests results or not. Table 3 depicts the comparison of the means of scores gained by the nontreatment group subjects in the pre- and post-tests. The table indicates that  $t(32) = -1.479$ ,  $p = 0.149$ , which is greater than 0.05. This shows that there is no statistically significant difference between the mean scores of the pre- and post-tests results of the nontreatment group. This could be because the students in the control group learned reading lessons through a similar learning procedure before the intervention started and after the intervention conducted in which there was no opportunity provided to them to practice the reading activities through the prereading, while reading, and postreading instructions that were why they did not show improvement in their posttest results of reading comprehension questions. The calculated effect size shows a small effect size (0.063). This indicates that the difference in the mean scores of the pre- and post-tests is low. This finding is comparable with Khaokaew [49] study's finding in that both studies' findings reflect that the control group did not improve their reading comprehension after the intervention because the control group did not receive the treatment through devised instruction.

(RQ4) Is there a statistically significant difference between the mean scores of the treatment group on pretest and posttest concerning students' achievement in reading comprehension?

**6.6. Improvement in Reading Comprehension in the Treatment Group.** As indicated in Table 4, after the intervention, the descriptive statistics showed that there is a big mean score difference (treatment before the intervention:  $M = 21.34$ ; treatment after the intervention:  $M = 30.45$ ), both before the intervention started and after the intervention was conducted, numerically, a big mean score difference was observed in the treatment group's mean scores in the reading comprehension post test.

A paired sample *t*-test was conducted to examine the extent to which explicit reading strategy instruction improved students' achievement in reading comprehension. And, a paired sample *t*-test result reveals  $t(34) = -14.66$ ,  $p = 0.000$  in which  $p < 0.05$ . This shows that there is a statistically

significant difference between the pretest and posttest scores due to the intervention conducted. This implies that explicit reading strategy instruction helps students achieve good reading comprehension scores on the reading comprehension tests. Based on Cohen [50], one can understand that the result of the partial eta squared for the group (0.863) also revealed that the intervention had a large effect on promoting the treatment group participants' achievement in reading comprehension. This shows that the intervention explained 86.3% variance in students' achievement in reading comprehension. This study's finding is consistent with the studies conducted by Rouijel et al. [23] and Khaokaew [49], which showed that the students in the experimental group tended to improve reading comprehension achievement scores more than those in the control group. Likewise, the data seem to provide some support to the assertions of the theory of reading comprehension instruction which claimed that students who engage in reading activities can comprehend a given reading text because students identify what strategy to use, how to use, when, and why to use. This shows that if a learner is provided reading activities through explicit reading strategy instruction, they could comprehend the reading text set for their grade level, and that could be the evidence for the improvement seen in the posttest results of participants in the treatment group.

Six randomly selected participants from the treatment group were interviewed; the interview analysis results also showed that the intervention provided ample experience to enhance students' achievement in reading comprehension. Accordingly, S1 opined that the intervention helped him to improve his achievement in reading comprehension. For instance, he replied; "the other experience I have got (from the training provided) is: I understood that my achievement in reading comprehension; especially, I was able to use reading strategies that seek a higher level thinking process to answer reading comprehension questions. For example, guessing the meaning of new words, searching main ideas, evaluating the reading text, and answering inference questions." S4 also expressed his opinion about the experience he got from the training that guided him to use the reading strategy to read and comprehend reading comprehension questions prepared from a reading passage. Similarly, S5 expressed that due to the experience she got from the training provided to her, she explained that her achievement in reading comprehension became better when answering reading comprehension questions prepared from a reading passage. "In my case, the training provided helped me understand how to reach the meaning conveyed through reading text; especially, reading comprehension questions that seek a higher level thinking process to guess the meaning of new words, search main ideas, and evaluate the reading text based on context."

(RQ5) Is there a statistically significant difference in the mean score of each subskill of reading comprehension between the treatment and the nontreatment group after the intervention was provided?

In general, the reading comprehension questions prepared from the reading passages were based on the subskills



TABLE 5: Comparison of the mean scores of the nontreatment and treatment groups on questions that require a lower level of thinking.

S. No.	Subskills of reading	No. of items	Treatment group (35)				Nontreatment group (33)			
			Before intervention		After intervention		Before intervention		After intervention	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Explicitly stated ideas	9	4.72	2.16	6.45	1.66	4.72	2.16	5.72	1.46
2	Fill in the blank spaces	2	0.60	0.81	1.00	0.84	0.48	0.79	0.78	0.92
3	Put ideas in order	2	0.60	0.65	1.14	0.77	0.60	0.65	0.69	0.58
4	Search-specific ideas	8	2.51	1.22	4.60	1.88	3.30	1.92	4.15	1.64
5	Total	21	2.1	1.21	3.29	1.28	2.27	1.38	2.83	1.15

TABLE 6: Independent samples *t*-test results for questions on each subskill of reading that requires a lower level of thinking.

S. No.	Subskills of reading	No. of items	Test	<i>t</i>	<i>df</i>	Sig. 2-tailed
1	Explicitly stated ideas	9	TBI	-1.287	66	0.203
			TAI	-1.913	66	0.060
2	Fill in the blank spaces	2	TBI	-0.590	66	0.557
			TAI	-0.990	66	0.326
3	Put ideas in order	2	TBI	0.038	66	0.970
			TAI	-2.670	66	0.010
4	Search-specific ideas	8	TBI	1.929	66	0.058
			TAI	-1.045	66	0.300

of reading that the students are supposed to be able to read and answer the reading comprehension questions. The questions were prepared based on the way students process to answer, i.e., questions that seek a lower thinking process and questions that seek a higher level thinking process. Twenty-one questions were prepared to examine whether students in both the treatment and the nontreatment group had a statistically significant difference in their achievement in reading comprehension that require a lower level of thinking process before the intervention started and after the intervention was conducted. From these, nine questions (true or false) inquired the students to answer questions that contain ideas explicitly stated, two questions inquired the students to fill in the blank spaces, eight questions required the students to search for specific ideas from the passage, and two questions probed the students to put ideas stated in order based on the reading passage.

Table 5 shows the comparison of the mean scores of the nontreatment and treatment groups on questions that require lower level thinking.

Table 5 depicts the comparison of the calculated average mean scores on each subskill of reading comprehension (four themes). These questions inquire the students answer them through a lower level thinking process. As displayed in the table, the mean score calculated for the four themes at preintervention (mean before intervention for treatment (MBIT) hereafter = 2.1) for the treatment group is similar to the nontreatment group's mean score calculated from the four themes, i.e., (mean before intervention for nontreatment (MBINT) hereafter) = 2.27), whereas after the intervention, as displayed in the table, the treatment group mean score (mean after intervention for treatment (MAIT)

hereafter = 3.26) exceed the nontreatment mean score (mean after intervention for nontreatment (MAINT) hereafter = 2.83). The data for the participants in the nontreatment group were, i.e., computed mean scores for four of the themes, i.e., MBINT = 2.26 and MAINT = 2.79; again, there is a slight mean increase in the postintervention test. Again, the data for the participants in the treatment group show an increase in the calculated average mean score at the postintervention, i.e., the computed mean score for four themes, i.e., MBIT = 2.1 and MAIT = 3.29. Although a mean score increase is observed from the data, it is uncertain to conclude that a significant difference is observed. Thus, to avoid this ambiguity, the researchers conducted a *t*-test statistical analysis to conclude whether there is a statistically significant difference being observed between the treatment and nontreatment groups or not.

Table 6 depicts the independent sample *t*-test of the nontreatment and the treatment groups on pretest and posttest results on each subskill of reading comprehension that inquires a reader to answer through low-level thinking.

Four themes on each subskill of reading which inquire about the students' lower level thinking were selected and questions were prepared as per the subskills. It was designed to check whether the participants in both the treatment and the nontreatment groups managed to answer it or not. Of the specific questions prepared to examine whether students are empowered to answer questions that offer them answers using lower level thinking were ideas explicitly stated in the passage (Theme 1: true or false questions, nine items), fill in the blank spaces (Theme 2, two items), put ideas in the order that appeared in the passage (Theme 3, two items), and search specific information (Theme 4, eight items). To

TABLE 7: Comparison of the mean scores of the nontreatment and treatment groups on questions that offer a higher level of thinking.

S. No.	Subskills of reading	No. of questions	Treatment group (35)				Nontreatment group (33)			
			Before intervention		After intervention		Before intervention		After intervention	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Reference questions	3	1.05	0.83	1.68	1.20	1.18	1.12	0.96	1.05
2	Guessing meanings	8	2.54	1.14	4.08	1.61	2.93	3.03	1.48	2.54
3	Search main ideas	4	1.48	1.03	2.34	1.18	2.00	1.33	0.78	1.48
4	Evaluate the text	1	0.37	0.49	0.82	0.38	0.51	0.15	0.36	0.37
5	Inferential understanding	2	0.40	0.65	1.05	0.68	0.60	0.18	0.58	0.40
	Grand mean	18	1.16	0.82	1.99	1.01	1.44	1.16	0.83	1.16

specifically talk about the questions prepared on the specific subskills, the independent samples test conducted (Table 6) reveals that  $t = -1.913$ ,  $df = 66$ ,  $p = 0.060$ ;  $t = -0.990$ ,  $df = 66$ , and  $p = 0.326$ ; and  $t = -1.045$ ,  $df = 66$ , and  $p = 0.300$ , there was no statistically significant difference between the treatment and the nontreatment group students in answering questions explicitly stated, questions that offer students to fill the blank spaces, and questions that offer students to search specific information from the passage. As shown in Table 6, an independent sample  $t$ -test conducted for the pretest shows that  $t = 0.038$ ,  $df = 66$ , and  $p = 0.970$ , although there was no statistically significant difference between the nontreatment and the treatment group students in putting ideas in order in the preintervention result, the after the intervention  $t$ -test result conducted for the posttest reveals that  $t = -2.670$ ,  $df = 66$ , and  $p = 0.010$ , there was a statistically significant difference between the nontreatment and the treatment groups in putting ideas in the order that comes from the reading passage.

In the postintervention test, of the four subskills selected for the questions that inquire them to answer using low-level thinking, the participants in the treatment group better outperformed on the reading comprehension questions prepared to let students put ideas in the order that comes from the passage. This result contradicts [23, 24] studies because the studies report that the students in the experimental group better answer questions that seek higher-level thinking than those questions seek lower-order thinking. Hence, why and how the participants in the treatment group outperformed better in the questions that inquire the student to put ideas in the order that come from the passage has to be investigated. But, for the rest three, the participants in both the treatment and the nontreatment groups showed the same performance in the reading comprehension questions explicitly stated, fill in the blank spaces, and search for specific information from the passage in the postintervention test. This might be because the students could get answers directly from the reading passage which the student may not be forced to go through higher level thinking, for example, in questions that offer the student to say true if the statement is correct and false if the statement is incorrect, fill the blank space questions, and search for specific information from the passage in which the answers are directly located in the text, i.e., the students are not required to infer that was why the students in both groups almost showed a similar level in answering the questions.

Table 7 depicts the comparison of the calculated average mean scores of the nontreatment and the treatment group students on each subskill of reading comprehension, questions that enquire higher level thinking (five themes) before the intervention started and after the intervention was conducted. As displayed in the table, the mean score calculated from the five themes before the intervention (MBIT = 1.16) for the treatment group is similar to the nontreatment group's mean score calculated for the five themes, i.e., (MBINT = 1.44), whereas after the intervention was conducted, as displayed in the table, the computed mean score (MAIT = 1.99) of the post-intervention for the participants in the treatment group show that there was progress in answering each of the items than of the preintervention (MBIT = 1.16). However, from the descriptive statistics, the data for the nontreatment group show that the students did not show a gain in the mean score, i.e., MBINT = 1.44 and MAINT = 1.16. Although a mean score increase is observed from the data, especially, the descriptive statistics, data for the participants in the treatment group did show better performance in the posttest results than in the pretest results. However, it is uncertain to conclude the significance or the nonsignificance difference between the groups by observing the mean score difference. Thus, to avoid this ambiguity, the researchers conducted a  $t$ -test statistical analysis (independent sample- $t$ -test) to conclude whether there is a statistically significant difference is observed between the treatment and nontreatment groups' mean scores or not.

Table 8 reveals the independent sample  $t$ -test conducted for questions that enquire about the students' higher level thinking. Table 6 reveals that  $t = 0.575$ ,  $df = 66$ , and  $p = 0.56$ ;  $t = 1.145$ ,  $df = 66$ , and  $p = 0.257$ , there was no statistically significant difference between the treatment and the nontreatment group students in answering reference questions and guessing meaning from context. Contrary to this, the  $t$ -test result conducted for the posttest reveals that  $t = -2.126$ ,  $df = 66$ , and  $p = 0.037$ ;  $t = -2.796$ ,  $df = 66$ , and  $p = 0.07$ , there is a statistically significant difference in the mean scores of the nontreatment and treatment group students in answering reference questions, guessing the meanings of new words that are prepared from the reading passage, respectively.

Again, Table 8 reveals that  $t = 1.929$ ,  $df = 66$ , and  $p = 0.063$ ;  $t = 1.188$ ,  $df = 66$ , and  $p = 0.239$ ;  $t = 1.808$ ,  $df = 66$ , and  $p = 0.075$ , there was no statistically significant difference between the treatment and the nontreatment group students in

TABLE 8: Independent samples *t*-test results for each subskill of reading.

S. No.	Subskills of reading	No. of questions	Test	<i>t</i>	<i>df</i>	Sig. 2-tailed
1	Reference questions	3	TBI	0.575	66	0.568
			TAI	-2.126	66	0.037
2	Guessing meanings	8	TBI	1.145	66	0.257
			TAI	-2.796	66	0.007
3	Search main ideas	4	TBI	1.893	66	0.063
			TAI	-3.990	66	0.000
4	Evaluate the text	1	TBI	1.188	66	0.239
			TAI	-7.468	66	0.000
5	Inferential understanding	2	TBI	1.808	66	0.075
			TAI	-5.573	66	0.000

answering questions that inquired students to search main ideas, evaluate the text, and to infer the answers beyond the lines. On the opposite, the independent sample *t*-test conducted for the posttest reveals that  $t = -3.990$ ,  $df = 66$ , and  $p = 0.000$ ;  $t = -7.468$ ,  $df = 66$ , and  $p = 0.000$ ;  $t = -5.573$ ,  $df = 66$ , and  $p = 0.000$ , there was a statistically significant difference in the average mean score calculated for the two groups in answering questions asked the students to search main ideas, evaluate text, and answer questions whose answer can only be generated beyond the lines, showing that the students in the treatment group performed well after the intervention. The findings are consistent with Rouijel et al.'s [23] study, in which the experimental group of students who were trained to use three higher level thinking: understanding, analyzing, and evaluating significantly improved between the pretest and posttest and outperformed their control group counterparts. Thus, both the current and the previous studies confirm that questions that require higher order thinking can be improved through explicit reading strategy instruction. Again, the study's findings are consistent with Lyons's [24] study that indicated the effectiveness of instructors providing relevant instructions in promoting higher level comprehension of science texts.

## 7. Limitations and Conclusion

Despite the positive outcome of this study in favor of explicit reading strategy instruction, one of its weaknesses is the study's small sample size; hence, one may wonder about the efficacy of the research in terms of the generalization of the findings. A small sample size reduces the probability of identifying an actual effect. The sample size, however, has no bearing on the current investigation because, according to Brown [51] and Siddharth [52], if the power of a statistical test is between 0.80 and 1, the result would be affected. The sample size selected is suitable and did not affect the study. Random assignment is not feasible in experimental research design because the researchers used intact class in its natural setting. Therefore, sample size variation may be a source of bias in the result. The study recommends that future research should aim at examining the effects of explicit reading strategy instruction on students' achievement in reading comprehension by considering a larger population and large sample size.

The findings from both quantitative and qualitative data analyses indicate that the intervention provided to participants in the treatment group guided them to read and comprehend better answer reading comprehension questions compared to the participants in the nontreatment group. Specifically, participants in the treatment group outperformed in answering reference questions, guessing the meanings of new words that are prepared from the reading passage; answering questions that inquired students to search for main ideas, evaluate the text, and answer inference questions that the answers are located beyond the lines. Hence, the explicit reading strategy instruction accompanied by prereading activities, while reading activities, and post-reading activities provided to the participants in the treatment group guided them to read and comprehend appropriately reading comprehension questions. This implies that the intervention (explicit reading strategy instruction) had a positive effect on the treatment group participants' reading comprehension performance. Hence, EFL teachers need to present reading lessons employing explicit reading strategy instruction to promote students' reading comprehension. Furthermore, it is recommended that concerned individuals are expected to conduct research to identify whether employing explicit reading strategy instructions can promote students' reading comprehension ability, to better answer questions that seek higher level thinking (inference, reference, evaluating the text, guessing the meaning of new words, and state the main ideas of the text) than questions that seek lower level thinking (fill in the blank spaces, put ideas in order, and search specific information from the reading passage). Considering the growing pedagogical support of explicit reading strategy instruction as a continuing process, tailoring programs to raise students' achievement in reading comprehension is recommended to be an essential component of learning/teaching reading.

## Data Availability

The data used to support the findings of this study are available upon request to the corresponding author.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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