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COGNITIVE AND METACOGNITIVE READING STRATEGIES FOR ETHIOPIAN STUDENTS IN ENGLISH AS A FOREIGN LANGUAGE

КОГНІТИВНІ ТА МЕТАКОГНІТИВНІ СТРАТЕГІЇ ЧИТАННЯ ДЛЯ ЕФІОПСЬКИХ СТУДЕНТІВ З АНГЛІЙСЬКОЇ ЯК ІНОЗЕМНОЇ

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ABSTRACT

Purpose. *This study's purpose is to investigate the effects of explicit cognitive reading strategy training on reading performance and metacognitive reading strategy awareness of Grade 9 students of Heto Secondary School at Hosanna Town, 232, south-west of Addis Ababa.*

Methodology*. For this quasi-experimental study, two parallel home-made tests, a pre-*

Мета. *Мета цього дослідження полягає в тому, щоб дослідити вплив експліцитної когнітивної стратегії читання на продуктивність читання та усвідомлення метакогнітивної стратегії читання учнів 9 класу середньої школи Хето в місті Хосанна, 232 району на південному заході від Аддіс-Абеби, Ефіопія.*

Методологія. *Для цього квазі-експериментального дослідження було*

test and a post-test administered before and after the intervention, respectively, and a metacognitive reading strategy awareness questionnaire were used. Data were gathered from 100 participants of experimental and control groups, 50 students from each group, before and after 14 hours strategy training within 12 weeks. SPSS, version 25, was used to analyse data. Independent Samples Test to compare groups, and Paired Samples Test to compare variables/scores of the groups were employed during analysis.

***Results**. The results showed a statistically significant difference between the pre-test and the post-test scores of reading performance (p=.000) of each group. However, the Experimental Group made an increment in reading performance, whereas the Control Group made the opposite, a decrement in reading performance. The relationship of both groups was strong and positive. However, neither group showed significant changes in metacognitive reading strategy awareness.*

***Conclusion**. The study concluded that explicit cognitive reading strategy instruction empowered students to outperform reading comprehension and vice versa, though it did not change students' strategy awareness. This implies that concerned bodies should give due attention to enhancing the explicit approach to cognitive reading strategy teaching.*

***Keywords:** cognitive reading strategy, explicit strategy training, metacognitive reading strategy awareness, reading performance.*

використано два паралельних тести, пре-тест і пост-тест, проведені відповідно до та після експерименту, а також опитувальник усвідомлення метакогнітивної стратегії читання. Дані були зібрані від 100 учасників експериментальної та контрольної груп, по 50 учнів з кожної групи, до та після 14-годинного навчання стратегії протягом 12 тижнів. Для аналізу даних використовувався аналіз SPSS версії 25. Під час аналізу використовували тест незалежних зразків для порівняння груп і тест парних зразків для порівняння змінних/оцінок груп.

***Результати.** Результати показали, що існує статистично значуща різниця між результатами читання перед і після тесту (p=0,000) у кожній групі. Проте експериментальна група збільшила продуктивність читання, тоді як контрольна група, навпаки, зменшила продуктивність читання. Стосунки обох груп були міцними та позитивними. Проте обидві групи не показали істотних змін метакогнітивної стратегії читання.*

***Висновок.** Таким чином, дослідження дійшло висновку, що чітке навчання когнітивній стратегії читання дозволило учням перевищити рівень розуміння прочитаного, хоча це не змінило усвідомлення учнями стратегії. Це означає, що зацікавлені сторони мають приділяти належну увагу посиленню експліцитного підходу до навчання стратегії когнітивного читання.*

***Ключові слова:** когнітивна стратегія читання, навчання стратегії, усвідомлення метакогнітивної стратегії читання, ефективність читання.*

INTRODUCTION

Although reading is a complex process influenced by cultural and individual factors, it is one of the major aspects of human communication (Oxford, 2017) for a better understanding of written texts. Reading is an essential skill to enable readers to extract meaning from written texts (Habók & Magyar, 2018). Frequently, equipping readers as required at all educational levels is a vital issue for professionals in the area. Sound reading strategies are needed to enhance students' reading ability. Scholars define these strategies as steps, that is, actions that learners take to improve their reading skills (Oxford & Cohen, 1992, cited in Paredes, 2010).

Studies reason the need for improving reading ability at high schools. According to Kirsch et al. (2002), cited in Guthrie et al. (2004), comprehending ability is the basis for better learning. Scholars such as Anderson, Hiebert, Scott, and Wilkinson (1984) in Dole, Duffy, Roehler, and Pearson (1991) pointed out that reading is complex and demanding.

Thus, as Lei (2010); KNEC Report (2011); Masinde (2005) in Kulo and Omulando (2014), it is considered as a serious problem that students face in understanding written texts in secondary schools.

Though teachers complain about doing their best to improve readers' comprehension ability at school, students are unable to comprehend what they are reading, and a large number of students join secondary schools with extremely weak reading abilities (Diller, 2007 & Hodgson, 2008 in Kulo & Omulando, 2014). In fact, there is a great concern among educators as students' reading is declining at an alarming rate, and students' reading ability becomes weak when they complete secondary schools without acquiring required reading comprehension practices (Agak, 1995 quoted by Kulo and Omulando, 2014). This implies that developing the reading ability of secondary school students deliberately and systematically is crucial (KIE 2006 in Kulo & Omulando, 2014).

Above this, to be successful in comprehension ability is a serious issue of learning English in the Ethiopian context. In fact, study reports by Smith, Stone and Comings (2012) show that learning to read effectively and to extract the required meaning from written texts in the English context of Ethiopia is considered to be vital. Therefore, being able to read in English to make learning easier and to comprehend written texts better, especially in Ethiopian secondary schools, is indispensable.

Scholars such as Karim and Qanwal (2016) have suggested that cognitive reading strategies play considerable roles in extracting required meanings from written texts. However, the mode of explicit or implicit training of these strategies is arguable among scholars. Some scholars believe that an explicit mode of instruction of cognitive reading strategy is associated with improved reading outputs of students in secondary schools (the Institute of Education Sciences, 2010, quoted by Moore, 2015). Moore argues that this finding is in line with the recommendations of the reading comprehension review of the National Reading Panel (2000).

Moreover, scholars agree that using cognitive reading strategies effectively can result in students' awareness of metacognitive reading strategies. Concerning this, as literature shows, cognitive strategies and metacognition work in relation to increasing learners' reading comprehension (Kuhn, 2000, cited in Moore, 2015). In other words, as Moore (2015) stated by citing Pressley (2002) and Dermitzaki, Andreou, and Paraskeva (2008), metacognitive use of strategies is positively correlated with reading comprehension scores. In line with this, Oakhill and Cain (2007 in Moore, 2015) discovered that students' ability to monitor their comprehension at different age levels significantly predicted their reading comprehension.

However, the favourable effect of cognitive reading strategies is controversial. This effect could be controversial for some reasons. According to Manoli (2013), one of the reasons is that the learning context (first/second/foreign language) of the reading strategy is variable and arguable. In this regard, as scholars such as Green and Oxford (1995) quoted by Oxford (2003), and Ali and Razali (2019), different readers of different strategies in different English contexts perform quite differently.

As Raftari, Seyyedi, and Ismail (2012) indicated, that is why the term, reading strategy, is variously used in different contexts. Thus, as Pawlak and Oxford (2018), this issue deserves attention to be investigated in future research. On the other hand, several

scholars strongly argue that reading performance of reading strategy instruction is not context-dependent (Saks et al., n.d; Anderson, 2003 in Raftari, Seyyedi, & Ismail, 2012). As these scholars, context distinction is diminishing, and the argument of these contexts may be no longer important as of today. Contrary to this, Pawlak and Oxford (2018); Ali and Razali (2019) argue that this learning context issue has continued controversial.

Another point is that strategy study results, for instance, studies that Dole, Nokes and Drits (2009) reviewed revealed that the statistical significance of the effect of cognitive reading strategies on reading performance between two experimental and control groups is arguable up to the present. In fact, several studies showed discrepancies of the effect of cognitive reading strategies on reading outcomes (Naiman et al., 1978/1996, cited in Macaro, 2006; Dole et al., 2009; Şahan's, 2012; Manoli, 2013; Yaman & Çakici's, 2013; Oxford & Burry-Stock, 1995 cited by Barjesteh, Mukundan & Vaseghi, 2014).

Researchers such as Dole, Duffy, and Pearson (1991), Dole, Nokes, and Drits (2009), Pawlak and Oxford (2018), and Ali and Razali (2019) believe that research can minimize discrepancies between the two modes of reading strategy instruction. Thus, to fill the gap, the researchers call for further investigations.

In addition, local studies reviewed by the current researchers indicated that cognitive reading strategies have not been studied at least separately (Filate, 2012; Bachore, 2014; Tiruneh, 2014; Belilew, 2015; Bogale, 2018; Yadetta et al., 2017; Tekle & Nchindila, 2017; Seid, 2017; Getachew, 2018; Gidalew and Van den Berg, 2018; Getachew et al., 2018; Enyew, 2019). Therefore, the current study attempted to test the explicit mode of strategy instruction to examine its practical impact on reading performance and metacognitive reading strategy awareness in an Ethiopian secondary school.

Studies reviewed so far show that cognitive reading strategies have not been separately investigated in experiments to show their possible effects on reading comprehension and metacognitive reading strategy awareness when multiple reading strategies are taught explicitly. Thus, multiple cognitive reading strategies have been included in the experiment.

The **purpose** of the study is to examine which of the two explicit and implicit approaches of cognitive reading strategy instruction significantly improves EFL students' reading performance and metacognitive reading strategy awareness in the Ethiopian context. Accordingly, this study attempted to answer these two questions:

1. Is there a difference between the reading performance of experimental and control groups when they are taught explicit and implicit cognitive reading strategies, respectively?
2. Does explicit/implicit cognitive reading strategy training contribute to the awareness of metacognitive reading strategy, and (if any) which mode better contributes?

METHODOLOGY

This is quantitative research. This study applied a quasi-experimental approach to investigate students' reading performance and metacognitive reading strategy awareness of two explicit and implicit modes of cognitive reading strategy training quantitatively. Two intact, experimental and control, groups were assigned for this

purpose. Accordingly, the experimental group was taught cognitive reading strategies explicitly, whereas the control group was taught the same strategies implicitly. This approach allows for the application of statistics in the analysis of numerical data to see relationships between the two groups.

- **Participants**

Students of Grade 9 of a randomly selected public school in Hosanna Town participated in this study. From four schools in the town, Heto Secondary School was selected randomly by using a lottery method. Two intact groups were further randomly selected. Section A was assigned randomly as Control Group and section B as Experimental Group.

A total of 100 students, 50 students from each group, participated in this research. A total of 45 male (experimental = 22 and control = 23) and 55 female (experimental = 28 and control = 27) students participated in the study. All of the participants were between 15 – 20 years of age, and, as the analysis of Independent Samples Tests indicated, there was no statistically significant difference between the ages of the two groups. The proportion of the participant's gender and the significance of age difference between the groups would minimise their impact on the outcomes.

- **Instruments**

To collect data, two parallel teacher-made tests, a pre-test and a post-test, and a set of questionnaires were utilized. The researchers preferred parallel teacher-made tests to standardised tests to fit the context and the English language ability of the study participants.

Each test, was constructed from a fairly short passage, consisted of 25 objective items. Out of the 25 items, five fill-in-the-blank, three true/false items, twelve multiple-choice, and five matching items were used. The pre-test, which was administered before commencing training, was used to see whether the reading proficiency level of the two intact groups was similar; the post-test, which was administered immediately after the completion of the strategy training, was used to compare each group's reading performances and see possible differences.

Validation processes were carried out thoroughly to standardise the homemade tests. After the researchers prepared the tests, two English teachers in secondary schools evaluated both tests for face validity and content validity. When the teachers evaluated the tests, they focused on aspects such as parallelism, appropriateness, wording, clarity, difficulty level, culture bias, etc. Besides, a measurement and evaluation expert evaluated the tests. After these validation processes, both tests were piloted in 2021/2022 academic year to gain lessons for further improvements of the tests. For piloting, a total of 70 students, 35 from each group, took each test after and before the intervention.

In addition, the Difficult Level and Discrimination Index of items (Item Analysis) were calculated for each item during both pilot and main studies. Based on this analysis, each item of the tests was checked whether it was too easy/difficult and/or discriminating. Important amendments were made based on the Item Analysis. Every item of the tests was examined thoroughly to standardise the teacher-made test. Finally, 25 acceptably fitted items of each test were used for the main study.

Moreover, to determine whether the distribution of the data sets was well-modelled, normality tests of both test scores were computed during both the pilot and the main studies. Although the pilot study tests failed to meet a lower bound of the true significance in some cases, the points plotted in the QQ plot showed that normal data fell approximately on a straight line, indicating high positive correlation. Importantly, both tests met a lower bound of the true significance in each case during the main study. This indicated that the distribution of the scores was normal. Normality Tests enabled which statistical methods to to analyse the current study's data.

The second tool, Metacognitive Awareness of Reading Strategy Inventory (MARSI) version 1.0 by Mokhtari and Reichard (2018), was employed to gather data about students' awareness of metacognitive reading strategy before and after intervention. The questionnaire used contained 30 items. It was in a five-point Likert scale from 1 (I never or almost never do this) to 5 (I always or almost always do this). .93 of MARSI's reliability was reported, indicating that it is a reasonably reliable questionnaire to measure the awareness in question. In addition, Cronbach's Alpha .855 was obtained before and after the intervention during the pilot study. Similarly, Cronbach's Alpha .915 and .925 were obtained from the self-reported questionnaire administered before and after the training of the main study.

The same questionnaire administered before commencing intervention was repeated at the end of the training. The first round of self-reporting was used to understand the students' state of awareness of metacognitive reading strategy. The second one was used to see whether or not the research participants showed changes in their awareness of metacognitive reading strategy. The researchers translated the questionnaire items from English (foreign language) into Amharic (the students' second language) and was put below each item of English version. This was needed to ensure a full understanding of the respondents.

– **Materials**

Student textbook of Grade 9, English for Ethiopia, (Bailey, 2003) was the only source of materials used for strategy training. Three units, from units two to four, of reading sections of the mentioned textbook were selected for the purpose. These sections were selected to avoid or minimize any unwanted inputs that would likely be gained through extra practise in the activities in the textbook. If different materials rather than the materials in the textbook were prepared and used for the training, then the materials in the textbook could be another and unwanted source of practising reading comprehension when taught by likely different teachers, and this could affect the research findings of the study.

Thus, both control and treatment groups were provided with the same materials of the reading sections in the student's textbook but with different cognitive reading strategy training approaches. The Control Group of the study was taught the reading materials in the textbook and the reading strategies provided in it using a conventional approach, whereas the Experimental Group was taught the same materials and reading strategies in the textbook as that of the Control Group but with explicit explanations of the strategies (Oxford, 1990). The six cognitive reading strategies focused were repeating, reasoning deductively, analysing expressions, taking notes,

summarising and highlighting. These strategies, presented in the students' textbook, did not actually invite teachers to teach them plainly.

All the reading comprehension activities and exercises designed for students in the current Grade 9 English textbook were used with and for different purposes. To control unwanted and likely influencing treatment, there was not an application change of the activities and exercises in the student's current textbook. In other words, all the activities and exercises practised by the groups were the same as those of the activities and exercises practised currently by the other groups (sections) of Grade 9. Hence, the materials in the student's textbook and the strategies were kept constant. As the quasi-experiment aimed to examine the considerable difference likely to be observed between the two groups because of the two modes of training, the cognitive reading strategies mentioned were plainly taught for the Experimental Group to the maximum.

- **Data Collection Procedure**

The researchers obtained ethical approval from Hosanna Town Education Office and Heto Secondary School administrations where the research took place before administering the research tools. The researchers also obtained participants' agreement to participate in the study. Following this, the students of both groups filled in the questionnaire two days before they took the pre-test. Then, the strategy training was carried out for 14 hours within 12 weeks from 24 October 2022 to 13 January 2023. The same well-oriented English teacher taught both groups to avoid or minimize bias that could occur during strategy training. After the intervention, the second round of self-reported data and post-test results were collected in January 2023. Data were collected similarly to that of the first round, before the intervention. All the participants took the tests under similar conditions, including time. Each test took 50 to 75 minutes to complete. Each test was marked out of 43 and the scores were recorded carefully for further processes of analysis using SPSS, version 25.

- **Data Analysis**

To analyse quantitative data collected through tests and questionnaires, the T-Test of SPSS, version 25, was utilized. An independent samples t-test (using the independent samples test) was applied to compare the two groups. Paired Samples T-Test (to use Paired Samples Test) was applied to compare scores of each group. Means of scores and Standard Deviations (distances of scores from means) were also used. Cohen's d and Pearson's correlation coefficients (Pearson's r) were employed to determine the strengths of mean scores relationships of tests. Spearman's correlation coefficients (Spearman's rho) were computed to determine the relationships of self-reported questionnaire data of the groups. In each case of analysis, unless explained, 95% of the significance level or p-value ($p<.05$) was used to determine whether relationships between groups or scores were significant or not.

RESULTS

This section presents the results. Data gathered through the tests and the questionnaire to answer the two research questions were computed using referential statistical tools, as mentioned earlier and indicated hereunder along with headings and tables. Inferential data that went together or that needed to be closely explained were merged in simplified ways, as quantified in the tables below. Hence, descriptive

statistics and correlation coefficients have been presented together in merged tables for simplification.

– **Contribution of cognitive reading strategy to reading performance**

The first research question was: "Is there a difference between the reading performance of experimental and control groups when they are taught explicit and implicit cognitive reading strategies, respectively?" To answer this question, scores of pre-test (Score 1) and post-test (Score 2) of the target groups were compared using T-Test as shown in tables 1 and 2 below. Cohen's d and Pearson's correlation coefficients (Pearson's r) were used to determine the strengths of the relationships between groups and scores, respectively.

Table 1

Comparison of both pre-test and post-test of groups

Test	Group	N	Mean	SD	t	df	Sig (2.tailed)
Pre-test	Experimental	50	15.040	6.5011	-.694	98	.489
	Control	50	15.970	6.8901			
Post-test	Experimental	50	16.96	7.7312	1.613	98	**.098**
	Control	50	14.49	7.3924			

To ensure whether both experimental and control groups were significantly similar in reading ability prior to the intervention or not, their pre-test scores were calculated using the Independent Samples Test as presented in the pre-test row of Table 1 above. Although the distance (SD = 6.5011 and SD = 6.8901) from the means (M = 15.04 and M = 15.97) of the groups, respectively, was similar, it seemed that the Control Group performed better (by 0.93 mean scores) before the groups were trained cognitive reading strategies.

However, the level of significance, p-value = .489 (t= -.694, df = 98, sig .489), showed that no statistically significant difference was shown between the two groups concerning their reading ability before they took strategy training, as a p-value above .05 shows an insignificant relationship. Cohen's d calculated (d = 0.06) showed that the effect of the relationship between the groups was weak (between 0-0.20). The result indicated that both groups were homogeneous in reading ability before they received strategy training.

After ensuring the homogeneity of the groups in reading ability, intervention was carried out and post-test was administered at the end of the intervention. The post-test results have been put in the same table above as put on the post-test row.

To check whether both experimental and control groups had improved their reading ability after the intervention or not, their post-test scores were calculated using the Independent Samples Test, as shown in Table 1 above. As to the distance (SD = 7.7312 and SD = 7.3924) from the means of the groups, the means (M = 16.96 and M = 14.49) of the experimental and control groups, respectively, seemed different; the difference was 2.47. However, the p-value = **.098** (t = 1.673, df = 98, sig .**098**) showed no statistically significant relationship between the groups. Cohen's d calculated (d = 0.326) showed that the relationship's effect (between .20-.50) was also modest. If both

groups had improved their reading performance, there would have been a statistically significant difference. group however, This does not mean that neither groups improved reading performance after they were taught cognitive reading strategies.

To check the performance change of each group after the intervention, their pre-test (Sore 1) and post-test (Score 2) scores were calculated by using paired Samples Test. This has been shown in table 2 below.

Table 2

Comparison of pre-test (Score 1) and post-test (Score 2) scores of the groups

Group	Score	N	Mean	SD	Pearson's r	Sig (2-tailed)
Experimental	Score 1	50	15.04	6.5011	.643	**.000**
	Score 2	50	16.66	7.3712		
Control	Score 1	50	15.97	6.890	.584	**.000**
	Score 2	50	14.49	7.392		

Table 2 above shows that the mean score of pre-test of the Experimental Group (M = 15.04) seemed smaller than the mean score of post-test (M = 16.66) by 1.62. Again, the distance (SD = 6.50 and SD = 7.37) from the means seemed relatively different. As the Paired Samples Test in the last column of the same table shows, the p-value, p = **.000,** (r = .643, sig = **.000**) of the relationship of variables indicated that there was a statistically significant difference between the variables of Experimental Group as the p-value was 0.001.

The effect size (r = .643) in the same table showed that the relationship of the variables was strong and positive (if the pre-test score of the Experimental Group increased, the post-test score of it would also increase and vice versa).

The same table, Table 2, above shows the relationship between the pre-test and post-test scores of the Control Group. In the table, the means of the pre-test (M = 15.97) and post-test (M = 14.49) scores seemed slightly different (by 1.48); the pre-test score seemed a bit better than the post-test score. However, the distance (SD = 6.89 and SD = 7.39) from the means seemed similar (the difference is only 0.502).

When the significance level was calculated, as shown in the last column of the table, the p-value, p = **.000** (r = .584, sig = **.000**) showed a statistically significant difference between the two variables; p-value was below **0.001**. The effect size (r = .584) shown also indicated that the relationship of the variables was strong and positive (if the pre-test score of the Control Group increased, the post-test score would also increase and vice versa).

This implies that training cognitive reading strategy explicitly would desirably improve students' reading performance and vice versa.

– **Contribution of Cognitive Reading Strategy Training to Metacognitive Reading Strategy Awareness**

The second research question was: "Does explicit/implicit cognitive reading strategy training contribute to the awareness of metacognitive reading strategy, and (if any) which mode of the two better contributes?" To answer this second question, the first

round self-reported mean score (Score 1) and second round self-reported mean score (Score 2) of metacognitive reading strategy awareness (strategy awareness) of the groups were compared using T-Test as shown in Tables 3 and 4 below. Accordingly, Cohen's d and Spearman's correlation coefficients (Spearman's rho) were used to determine the strength of the relationships between the groups and the scores, respectively.

Table 3

Comparison of first and second round self-report scores of the groups

Round	Group	N	Mean	SD	t	df	Sig (2-tailed)
1st	**Experimental**	50	99.36	24.025	-.768	98	.444
	Control	50	102.72	19.465			
2nd	**Experimental**	50	101.54	18.945	2.270	98	.025
	Control	50	92.50	20.84			

In Table 3 above, the means (M = 99.36 and M = 102.72) of self-reported scores of both experimental and control groups, respectively, seemed to be relatively similar. However, the distance (SD = 24.025 and SD = 19.465) from the means seemed to be slightly different. As the p-value, p =**.444** (t=-.768, df=98, sig=**.444**), was greater than .05, there was no statistically significant difference between the two groups concerning strategy awareness prior to the intervention; as Cohen's d (d = 0.03) showed, the strength of the relationship was weak, which was between 0 – 0.20. This means that the groups were similar in their strategy awareness before the intervention.

In the same table, Table 3 above, the mean scores (M = 101.54 and M = 92.50) of experimental and control groups, respectively, depicted that slight difference was observed between the two groups. The respective groups' Standard Deviations (SD = 18.945 and SD = 20.84) also showed that the groups seemed to have slightly different distances from their respective means. As the p-value, p = **.025** (t =2.270, df =98, sig =**.025**) showed, statistically significance difference between the groups was observed concerning self-reported scores of strategy awareness. As Cohen's d (d = 0.454) showed, the effect of the relationship was modest, which was between 0.21-.50. The next table is used to compare the paired scores of the groups before and after the intervention.

Table 4

Comparison of 1st and 2nd self-reported mean scores (Score 1 and Score 2)

Group	Score	N	Mean	SD	rho	Sig (2-tailed)
Experimental	Score 1	50	99.36	24.025	-.107	.459
	Score 2	50	101.54	18.945		
Control	Score 1	50	102.72	19.465	.129	.370
	Score 2	50	92.50	20.840		

Table 4 above shows the comparison of self-reported mean scores of each of the experimental and control groups before (Score 1) and after (Score 2) the intervention in the Paired Samples Test. Little difference (2.18) in the mean scores of strategy awareness of the Experimental Group between score 1 and score 2 (Mean = 99.36 and M = 101.54) was observed. Differences in Standard Deviations (SD = 24.025 and SD = 18.945)

from the means were also observed.

However, as this difference could not tell us the significance level of the relationship, it needed to calculate the level of significance and check. Accordingly, the p-value, p = **.459**, (rho = -.107, sig = **.459**), which was above .05, indicated no statistically significant relationship between self-reported scores of the strategy awareness of the group before and after the intervention.

The strength of the relationship's effect (rho = -.107) was weak and negative. This means that if score 1 of strategy awareness were high, score 2 would be low, and vice versa. This finding is interesting and questionable, and it needs further investigation, as the group with special treatment did not show improvement of metacognitive reading strategy awareness.

The same table, Table 4 above, is used to compare the paired self-reported scores of the Control Group in the same way as that of the Experimental Group. As shown in the table, a difference (by 10.22) of the mean scores of strategy awareness of the group between score 1 and score 2 (M = 102.72 and M = 92.50), respectively, was observed. A little difference in Standard Deviations (SD = 19.465 and SD = 20.840) from the means was also observed.

However, as this difference could not tell us the significance level of the relationship, it needed to calculate the significance level and check. Accordingly, the p-value, p = **.370** (rho = .129, sig = .370), which was above .05, indicated that a statically significant relationship was not seen between self-reported scores of strategy awareness of the Control Group before and after the intervention. The strength of the relationship's effect (rho = .129) was also weak and positive. If score 1 of strategy awareness were high, score 2 would also be high and vice versa.

DISCUSSION

This study investigated effects of explicit cognitive reading strategy training (simply strategy training) on reading performance and metacognitive reading strategy awareness (simply strategy awareness). The findings showed a statistically strong relationship of both groups' reading performance, unlike strategy awareness.

Both experimental and control groups were homogeneous in reading ability in the beginning, before they received strategy training (p= **.100**). The mean score results of the two groups after the strategy training also showed the statically insignificant difference between the two groups (p = **.080**) as p-value is >.05.

Each group showed a statistically strong difference of reading performance in the post-test scores. When the mean scores (M = 15.04 and M = 15.97) of pre-test and (M = 16.96 and M = 14.49) of the post-test of experimental and control groups, respectively, were compared, the mean scores of the Experimental Group was smaller in the pre-test but far greater in the post-test than that of the mean scores of Control Group.

However, as the level of significance, p-value, of both groups was <.001 (p = .000), both groups showed strong significant changes of reading performance after they received strategy training. To put this unambiguously, the reading performance of the Experimental Group significantly increased because the group was taught the

reading strategy explicitly, whereas the reading performance of the Control Group significantly decreased because the group was not taught the reading strategy explicitly or because the group was taught reading strategy implicitly.

In other words, the reading performance of the Control Group decreased because the group was indirectly (implicitly) taught conventional reading strategies as in the students' textbook. The results of each group align with some findings of studies indicated in the literature, as presented hereunder.

Some earlier findings of explicit cognitive reading strategy training seem controversial (Dole et al., 2009), Suyitno, 2017). For instance, Zarei and Tondaki (2018) found that no significant difference between the effects of implicit and explicit techniques on reading comprehension was shown. On the other hand, the Experimental Group of the current study outperformed reading performance after the group was taught cognitive reading strategies explicitly in the Ethiopian secondary school context of reading in English.

This finding goes with the argument that these strategies are considered extremely powerful learning tools (O'Malley, Chamot, Stewner-Manzanares, Kupper, & Russo, 1985) in Griffiths (2003) to improve students' reading performance in every context. It also goes with the finding of Li et al (2022); these researchers found that students who received explicit reading strategy instruction significantly improved their reading comprehension.

Regarding this, Oxford (2003) argued that developing the awareness of reading strategies can be achieved through preparing for and conducting reading strategy instruction. Thus, it is possible to put that training cognitive reading strategies explicitly can improve students' reading performance considerably; it has been found that when teaching explicit cognitive reading strategies increases, students' reading performance also increases and vice versa.

However, the Control Group of the study did not improve reading performance after the strategy training; it did not even keep the performance that was obtained before the strategy training. Instead, the group's performance decreased significantly after the intervention was carried out. Despite this, several scholars, as Oxford (1990) indicated, argued that implicit instruction needs to be encouraged. Such scholars try to demonstrate "how active learning techniques implicitly stimulate the use of language learning strategies" (Oxford, 1990, p.232).

In addition, this finding goes against what researchers such as Dole, Duffy, Roehler and Pearson (1991) suggested for future research. Based on their review of the literature, these scholars suggested that, certainly, both younger and older students can learn reading comprehension processes in indirect ways, and indirect instruction plays a great role in helping students become better comprehenders.

As Carver (1987) suggested in Dole, Duffy, Roehler & Pearson (1991), comprehension strategies should (perhaps can only) be learned indirectly. However, the present study's results go against these scholars' suggestions. Those students who were taught cognitive reading strategy implicitly (indirectly) could not improve their reading performance.

In spite of the outcome of the current study, reading strategy learning context is a

controversial issue among scholars (Kostikova et al, 2020), (Wendaferew, Berlie, 2024). According to the review of 27 studies on the teaching of cognitive and metacognitive reading strategies for second/ foreign language learners, Ali and Razali (2019) showed that through the process of reading, the learner becomes an active participant in producing interaction with the writer of the text by using various reading strategies; however, building such a connection between the reader and the written information of the text is complex and it can be quite difficult for students of English as a foreign language to apply different types of reading strategies.

In line with this, Raftari, Seyyedi, and Ismail (2012) strongly argued that the lack of a clear-cut definition of reading strategies is largely due to the way the term has been used in different contexts, such as first language, second language, or foreign language learning. On the contrary, earlier studies such as of Saks, Leijen and Täht (n.d.) concluded that, though cognitive reading strategies have a direct effect on all four language competencies, the effect of learning strategies on learning outcomes does not depend on the learning context, but are transferrable to other foreign language learning contexts.

In line with this, Anderson's (2003) study, cited in Raftari, Seyyedi, and Ismail (2012), answered two questions concerning differences between ESL and EFL contexts and concluded that perhaps the EFL/ESL distinction is diminishing. These scholars claimed that the traditional dichotomy between EFL and ESL may not be as important today as in previous years. However, the controversy of context has continued (Pawlak & Oxford, 2016; Ali, & Razali, 2019)) and this indicates that reading strategies to be applied by the students of a foreign language setting need due and further consideration of investigation.

Pawlak and Oxford (2018) argue that the contexts in which language learning strategies are explored deserve attention in future research because they believe that it is of paramount importance to strike between the broader contexts in which strategy studies are conducted in different educational levels and types of programmes within these contexts. Thus, to some extent, the current findings can be taken as the context of language learning may not be as serious as some researchers argue.

Concerning the effect of strategy training on the awareness of metacognitive reading strategy, both groups did not show improvement of the expected awareness. When each group's scores of 1st and 2nd round self-reports were compared, as p-values of the experimental (p = **.459**) and the control (**.370**) groups were greater than .05, no statistically significant difference was shown for both groups, the strength of the relationships for both groups was also weak.

This means that explicit cognitive reading strategy training could not significantly impact students' awareness of metacognitive reading strategy though several researchers such as Kuhn (2000) cited in Moore (2015) indicated reading strategies and metacognition work in increasing learners' reading comprehension. In this regard, Oxford (2003) also argued that developing the awareness of reading strategies can be achieved through preparing for and conducting cognitive reading strategy instruction.

However, the results of the current study go against the arguments that metacognitive reading strategies significantly contribute to EFL students' reading performance. Like

the current study, the findings of several studies such as of Mahrdad, Alghar, and Alghar (2012) of Iranian EFL students, and Pie (2014) of Chinese EFL students, of Meniado (2016) of Saudi EFL students confirmed that metacognitive reading strategy contribute insignificantly to students' reading performance.

These two contradicting issues indicate that the impact of cognitive reading strategy instruction on EFL students' reading performance is arguable, and, thus, further investigations that involve running EFA on Metacognitive Reading Strategy Awareness Inventory to see any underlying factors are needed.

CONCLUSIONS

The main objective of this study was to investigate the effect of explicit cognitive reading strategy training on learners' reading performance and their reading metacognitive reading strategy awareness. Based on the study's findings, it is possible to conclude that teaching students cognitive reading strategies explicitly has a power of improving students' reading performance of secondary school considerably though its effect does not show significant changes on metacognitive awareness of reading strategy.

As the results revealed, the students taught cognitive reading strategies explicitly showed strong and desirable improvement in their reading performance. On the contrary, students who were not taught cognitive reading strategy explicitly or those who were taught cognitive reading strategies implicitly/indirectly decreased their reading performance unexpectedly.

Thus, this control group showed strong significant difference between the variables (scores) before and after the strategy training. In short, teaching cognitive reading strategies explicitly can improve reading performance of Ethiopian secondary schools, particularly Grade 9 EFL students.

The results imply that English teachers need to give due attention to teaching their students cognitive reading strategies so that secondary school students in Ethiopia can considerably improve their reading performance. The findings also imply that the current students' textbook of Grade 9, "English for Ethiopia", needs revision to incorporate an explicit mode of strategy teaching.

Moreover, English teachers in Ethiopian secondary schools should be encouraged to teach cognitive reading strategies accordingly. Furthermore, the findings indicated that further investigations on the effects of explicit cognitive reading strategy training on students' awareness of metacognitive reading strategy are needed because students who were taught cognitive reading strategies in both explicit and implicit approaches could not improve their awareness of metacognitive reading strategy.

Thus, future studies may run EFA on Metacognitive Awareness of Reading Strategy Inventory to see whether it has any underlying factors. The effects of cognitive reading strategies can also be investigated in different aspects, such as forming experimental, control and comparison groups. The contribution of each strategy in question can be another point to study.

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DATA AVAILABILITY

The data are available from the corresponding author upon reasonable request.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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REFERENCES

Ali, A. M. & Razali, A. B. (2019). A Review of Studies on Cognitive and Metacognitive Reading Strategies in Teaching Reading Comprehension for ESL/EFL Learners. *English Language Teaching, 12*(6), 94–111. https://doi.org/10.5539/elt.v12n6p94

Bachore, M. (2014). Cognitive reading strategy training and its effects on EFL Learners' comprehension skills: The case of high school learners. *International Journal of Research (IJR), 1*(4), 258–276. https://journals.pen2print.org/index.php/ijr/article/view/63

Bailey, D. (2003). *English for Ethiopia: Student Textbook for Grade 9. Ministry of Education, Federal Democratic Republic of Ethiopia.* Pearson Education Limited

Barjesteh, H., Mukundan, J., & Vaseghi, R. (2014). A Synthesis of Language Learning Strategies: Current Issues, Problems and Claims Made in Learner Strategy Research. *Advances in Language and Literary Studies, 5*(6), 69–174. https://journals.aiac.org.au/index.php/alls/article/view/557/476

Belilew, M. (2015). The Relationship Between Reading Strategy Use and Reading Comprehension among Ethiopian EFL Learners. *International Journal on Studies in English Language and Literature (IJSELL), 3*(9), 34–41. https://www.arcjournals.org/pdfs/ijsell/v3-i9/5.pdf

Bogale, Y. N. (2018). Conceptualizing Reading to Learn: Strategy Instruction and EFL Students' Reading Comprehension. *International Journal of Curriculum and Instruction, IJCI, 10*(2), 93–117. Retrieved from ijci.wcci-international.org

Dole, J. A., Nokes, J. D. & Drits, D. (2009). *Cognitive Strategy Instruction*. https://www.researchgate.net/publication/268425680

Dole, J.A, Duffy, G.G., Roehler, L. R. & Pearson, P. D. (1991). Moving from the Old to the New: Research on Reading Comprehension Instruction. *Review of Educational* Research, 61(2), 239–264. https://doi.org/10.2307/1170536

Enyew, Ch. (2019). Interdependence among Amharic Language (L) Reading Ability, English Language (L2) Proficiency and L2 Reading Ability of Grade Eleven Students. *Research in Pedagogy, 9*(1), 28–39. https://doi.org/10.17810/2015.89

Filate, A. (2012). The impact of students' self-regulated language learning on their reading achievement: Grade 9 students in focus. *ELT Research Journal*, *1*(3), 175–188. https://api.semanticscholar.org/CorpusID:147567893

Getachew, R., Ferede, T., & Negash, A. (2018). The Effect of Explicit Reading Strategy Training on Students' Reading Comprehension Achievement and Reading Self-Efficacy. *The Ethiopian Journal of Social Sciences and Language Studies (EJSSLS), 5*(1), 3–20. https://journals.ju.edu.et/index.php/ejssls/article/view/687

Getachew, T. (2018). Assessment of English reading difficulty among grade three learners: The case of Ethio National School [Unpublished master's thesis, Addis Ababa University]. Addis Ababa, Ethiopia.

Gidalew, T.A. & Van den Berg, G., (2018). The relationship between lecturers' beliefs and their actual methods of reading instruction: An Ethiopian case study. *Reading & Writing, 9*(1), a162. https://doi.org/10.4102/rw.v9i1.162

Griffiths, C. (2003). *Language Learning Strategies: Theory and Research*. School of Foundations Studies. https://www.researchgate.net/publication/268413776

Guthrie, J. T., Wigfield, A., Barbosa, P., Perencevich, K. C., Taboada, A., Davis, M. H., Scafiddi, N. T., & Tonks, S. (2004). Increasing reading Comprehension and engagement through Concept-Oriented Reading instruction. *Journal of Educational Psychology*, *96*(3), 403–423. https://doi.org/10.1037/0022-0663.96.3.403

Habók, A. & Magyar, A. (2018). The effect of language learning strategies on proficiency, attitudes and school achievement. *Frontiers in Pyschology, 8,* Article 2358. https://doi.org/10.3389/fpsyg.2017.02358

Karim, S. & Qanwal, S. (2016). A Correlational Study of Cognitive Reading Strategy Instruction and Metacognitive Reading Strategy Awareness. *ELF Annual Research Journal, 18,* 01–22.

Kostikova, I., Honcharova O., Vorozhbit-Horbatiuk V., Soloshenko-Zadniprovska N., Marmaza O., & Lushchyk Y. (2020). The Impact of Summer Reading on Young Learners' Foreign Language Acquisition. *Journal of Educational and Social Research, 10*(2), 5–14 https://doi.org/10.36941/jesr-2020-0022

Kulo, S. A. & Omulando, C. A. (2014). An Investigation into the Classroom Strategies Employed for Reading Comprehension Ability in Secondary Schools in Kisumu North, Kisumu County, Kenya. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS), 5*(4), 405–409. https://hdl.handle.net/10520/EJC159307

Li, H., Gan, Z., Leung, S. O., & An, Z. (2022). The Impact of Reading Strategy Instruction on Reading Comprehension, Strategy Use, Motivation, and Self-Efficacy in Chinese University EFL Students. *Sage Open, 12*(1). https://doi.org/10.1177/21582440221086659

Macaro, E. (2001). *Learning Strategies in Foreign and Second Language Classrooms*. London and New York: Continuum. https://api.semanticscholar.org/CorpusID:60337564

Manoli, P. G. (2013). *Developing Reading Strategies in Elementary EFL Classroom* [Doctoral Thesis, University of Thessaly]. http://dx.doi.org/10.12681/eadd/31804

Mokhtari, K., Dimitrov, D. M., & Reichard, C. A. (2018). Revising the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and testing for factorial invariance. *Studies in Second Language Learning and Teaching*, *8*(2), 219–246. https://doi.org/10.14746/ssllt.2018.8.2.3

Moore, A. L. (2015). *A Research Review of Cognitive Skills, Strategies, and Interventions for Reading Comprehension*.

National Reading Panel. (2000, April). *Report of the National Reading Panel: Teaching children to read.* National Institute of Child Health and Human Development, National Institutes of Health, U.S. Department of Health and Human Services. www.nichd.nih.gov/publications/nrppubskey.cfm

Oxford, R. L. (1990). Language Learning Strategies: What Every Teacher Should Know. Boston: Heinle/Thomson Learning. Retrieved from https://api.semanticscholar.org/CorpusID:261663392

Oxford, R. L. (2003). *Language Learning Styles and Strategies: An Overview*. https://www.researchgate.net/publication/254446824

Oxford, R. L. (2017). *Language Learning Styles and Strategies: An Overview: Self-Regulation in Context* (2nd ed.). Routledge. https://doi.org/10.4324/9781315719146

Paredes, E. E. (2010). *Language learning strategy use by colombian adult English language learners: A phenomenological study* [Doctoral Dissertation, Florida International University]. FIU Electronic Theses and Dissertations. https://dx.doi.org/10.25148/etd.FI10080401

Pawlak, M., & Oxford, R. L. (2018). Conclusion: The future of research into language learning strategies. *Studies in Second Language Learning and Teaching, 8*(2), 525–535. https://doi.org/10.14746/ssllt.2018.8.2.15

Raftari, S., Seyyedi, K., & Mohamed Ismail, S. A. M. (2012). Reading strategy research around the world. *International Journal of Humanities and Social Science Invention, 1*(1), 24–30. https://www.researchgate.net/publication/367334501

Şahan, A. (2012). Cognitive Reading Comprehension Strategies Employed by ELT Students. *Sosyal Bilimler Enstitüsü Dergisi Sayi, 2*(2), 1–22.

Saks, K., Leijen, Äli, & Täht, K. (2016). Language learning strategies of EFL learners and their effects on learning outcomes. *Eesti Haridusteaduste Ajakiri. Estonian Journal of Education, 4*(1), 279–308. https://doi.org/10.12697/eha.2016.4.1.10

Seid Mohaammed. (2017). The Effects of Cooperative Learning on General Secondary School Student's Reading Comprehension Achievement. *International Research Journal of Humanities, Language and Literature,* 4(3), 12–34.

Smith, C., Stone, R., & Comings, J. (2012). *Field study report: Literacy policy and practice in Ethiopia: Building on the TELL program and EGRA results*. Center for International Education, University of Massachusetts.

Suyitno, I. (2017). Cognitive Strategies Use in Reading Comprehension and its Contributions to Students' Achievement. *IAFOR Journal of Education, 5*(3), 107–121. https://files.eric.ed.gov/fulltext/EJ1162686.pdf

Tiruneh, D. T. (2014). The Effect of Explicit Reading Strategy Instruction on Reading Comprehension of Upper Primary Grade Students. *International Journal of Education*, 6(3), 81–100. https://doi.org/10.5296/ije.v6i3.5989

Wendaferew, D., & Berlie, A. D. (2024). The Impact of Learning Strategies on English as a Foreign Language Learners' Reading Comprehension Skills Development. *Educational Challenges, 29*(1), 226–240. https://doi.org/10.34142/2709-7986.2024.29.1.16

Yadetta, B., Mereba, T., & Negash, A. (2017). The effect of reading strategy training on students' academic reading achievement: Grade nine students in Firi Gemta Gera and Yukiro High Schools, Ethiopia, in focus. *The Ethiopian Journal of Social Sciences and Language Studies (EJSSLS), 4*(2), 27–48. https://journals.ju.edu.et/index.php/ejssls/article/view/717

Yaman, I. & Çakici, D. (2013). The Effect of Cognitive and Compensation Strategy Instruction on Reading Comprehension Skill. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi, 32*(2), 369–384. https://www.researchgate.net/publication/31436541

Zarei, A. & Tondaki, N. (2015). The Effects of Explicit and Implicit Instructional Techniques on Iranian EFL Learners' Comprehension and Production of Lexical Collocations. *Academie Royale Des Sciences Outre-mer Bulletin Des Seances, 4*(2), 122–131. https://www.researchgate.net/publication/312470798