Effective Metacognitive Strategies to Boost English as a Foreign Language Reading Comprehension

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Abstract

The article investigates effective strategies for teaching English as a foreign language reading skill. Main emphasis is placed on the use of metacognitive strategies which help students to reflect on mental processes occurring before, during and after the process of reading. Thus, utilizing metacognitive strategies leads to successful performance and reading comprehension. The research dealt with the significance of metacognitive strategies as a tool for successful accomplishment in the process of reading and the tasks related to this process. The research was based on quantitative approach, as the data obtained through experiment were necessary to shape and study the statistics of achievement and failures of learners. The research revealed that using metacognitive strategies can be advantageous to improve EFL learners' metacognitive reading comprehension skill. Moreover, metacognitive awareness in learners lead to higher self-efficacy among learners. They become high achievers at learning EFL.

The findings of this study might have implications for learners, teachers, and material-developers in the field of English language teaching and learning.

Key words: reading strategies, metacognitive strategies, reading comprehension.

Introduction

Recent decades have witnessed an increase in the volume of international interaction, be it business, education, travel or many other contexts, and English has been a major means of communication used in each and every of these domains. For this reason, learners of English as a foreign language (EFL) need to master all four skills: listening, speaking, reading and writing. However, reading comprehension is one of the most important elements for their English language learning. The most vivid reason is the fact that all high stakes exams include reading comprehension. For instance, the TOEFL (Test of English as a Foreign Language) certificate is required in many countries to enroll foreign learners to university. Reading comprehension is a very challenging part of the TOEFL tests (Swales, 1990; Madsen, 1983; Peirce, 1992). Students who possess good speaking skills and are fluent while expressing their ideas orally encounter difficulties doing reading comprehension tasks because vocabulary in written English is more complex than in spoken one. The reading part of the TOEFL exam contains many high-level academic words. In fact, the reading section has a greater variety of words than the listening, speaking or writing parts of the TOEFL exam (Peirce, 1992). The same can be stated about Cambridge language proficiency tests where a great part of comprehension goes to reading (Al-Musawi. & Al-Ansari, 1999). The mentioned certificate is required at several universities both at national and international levels. Moreover, national tests also put much emphasis on reading comprehension. Within the scope of the present research, which was conducted in Georgia, Unified National Exam in English can serve as a good example. Centrally administered by the state, this exam determines the English language proficiency level for university entrants, and it puts much emphasis on reading

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comprehension. To get high points in the exams, a student must possess good reading skills. However, this presents only a pragmatic rationale for paying much attention to reading. A deeper analysis of the issue and the scholarly literature (Grabe, 1991; Krashen, 2003) supports the statement that modern pedagogy assigns an important role to reading comprehension and, accordingly, to teaching reading, in the process of foreign language acquisition. Needless to say, the development of reading skills requires sufficient teaching and learning. To ensure the efficiency of the process, a testing has become pivotal. Thus, the volume of testing has grown enormously and has changed substantially affecting what is taught, how it is taught, what is learned, and how it is learned.

Research shows that reading comprehension is a complex process and students usually have difficulties in constructing meaning from texts (Grabe & Stoller, 2002). The study conducted by Salataki & Akyel (2002) suggests that students, who start to learn the English language, are most likely to have serious difficulties in constructing meaning and understanding texts. Investigators have focused on this difficulty for a long time (Duke & Pearson, 2017; Campione, 1987). They suggested that metacognitive reading strategy is an effective tool which helps students to deal with reading comprehension.

Previously, when Grammar Translation Method (GTM) was the most accepted teaching method, the main reading activities involved translating from a foreign language and focusing on factual information. According to Cahyono and Widiati (2006), "... reading a text in the target language was the central activity in language teaching that placed emphasis on matching words in the text with meanings in the students' native tongue" (p.36). Teaching reading in this way paid little attention to the process of understanding longer texts (Dubin & Bycina, 1991). This trend did not support reading for academic purposes where a reader has to go deeper in the text and identify an author's message. When using GTM, learners approach reading passively, relying heavily on the use of a bilingual dictionary and spending countless hours laboring over sentence-by-sentence translations. Despite all the efforts made, their reading comprehension remains poor.

Recently the requirements for a good reader have changed. Reading, as it was stated above, does not mean only reading and translating or being oriented only at factual information. Reading comprehension requires understanding words, a context and what is inferred in the text by authors. Students mostly make mistakes with those questions which deal with not only factual information, but also inferring the meaning, understanding an author's message, etc. Accordingly, reading means understanding every external and internal part of the text. Moreover, the aim of teaching students effective reading skills is not only leading them to higher exam points, but also to real life where reading skill is so important. Many jobs nowadays involve reading comprehension. Furthermore, with the development of reading skill the learners' language performance improves. "The effort for improving the academic reading in the country is triggered by the present demands that those with high level of literacy skills in English often easily gain the job advertised" (Abidin et al., 2012. p. 360).

EFL students are required to learn reading in the classroom in order to successfully gain access to new information for academic purposes. They are also required to take some kind of standardized tests to pursue their further studies at graduate levels. With strengthened reading abilities, they will make a greater progress and attain a greater development in all the academic areas (Anderson, 2002). Therefore, academic reading comprehension has become a major challenge. This is due to the fact that teachers use outdated methods to teach reading skills. Thus, students are not prepared for more difficult exams which require more analytical skills. Moreover, students are not prepared for the real life where reading skills are important both in everyday life and career prospects.

The issues discussed above concerning English as a foreign language learning and mastering reading skills in particular is most relevant for the Georgian context. Georgian educational system has changed dramatically in recent couple of decades. Many

Georgian students go abroad to study, and, accordingly, frequently apply for international certificate exams. Georgian learners need to master skills in the English language in order to succeed in their exams and studies. Therefore, conducting research in language learning and teaching in Georgian context is of vital importance in order to provide relevant conditions for internationalization. Georgian students, like other EFL learners all over the world, need to master learning strategies to make their learning successful.

Metacognitive strategies help students to focus their attention, understand the content of reading materials, connect previously gained knowledge with new information and code them in their memories (Paris & Jacobs, 1984). The aim of metacognitive strategies is to teach students how to set objectives and how to become an effective and independent reader. Metacognitive strategies are related to how we think and learn (Ashman & Conway, 1993).

The aim of the study is to identify the significance of metacognitive strategies as a tool for successful accomplishment in the process of reading and the tasks related to this process, which were outlined above.

Literature Review on the Importance of Metacognitive Strategy in Reading Comprehension

Defining Metacognitive Strategies

Metacognitive reading strategy awareness has become one of the effective ways to facilitate students' reading comprehension in the field of foreign language studies. Metacognitive strategies are regarded as higher-order executive skills that make the use of knowledge of cognitive processes and involve thinking about the learning process, planning for learning, monitoring the learning task, and evaluating how well one has learned (Chamot & Kupper, 1989; Wenden, 1998). Foreign language teachers can improve students' reading skills by teaching them metacognitive strategies. Rather than focusing students' attention solely on learning a language, foreign language teachers can help students learn to think about what happens during the language learning process. Consequently, if students are able to monitor their thinking process, they will be more concerned about the mistakes they make and find the ways to avoid them further. According to Mazumder (2010), successful students are those who are capable of assessing and regulating their own learning behavior. They are never satisfied with superficial learning. If the students are able to control and observe their thinking and consequently the learning process, they become more confident and productive.

Metacognitive Strategies and Achievement in Reading

Foreign language instructors should use instruction time wisely, consider metacognitive strategies, and teach them as a valuable means in the process of learning a foreign language. When students reflect upon their learning strategies, they become better prepared to make conscious decisions about what they can do to promote their learning (Pressley & Afflerbach, 1995).

Wang et al. (2009) argued that metacognitive reading strategies have various benefits on students' reading comprehension. First of all, it concerns learners' high achievement results. The investigation held by Wang and his colleagues concerning EFL students indicated that metacognitive strategies are positively associated with learners' learning achievement results. Those who used metacognitive strategies had better results in reading comprehension. Moreover, those utilizing metacognitive strategies such as planning, monitoring and evaluating had more confidence in their learning process and were more successful than those students who did not use these strategies in their learning and reading.

Understanding metacognitive strategies is important because it deals with a mental process which is directly concerned with the processing information in order to learn, obtain, store, and retrieve information (Williams, M. & Burden, R., 1997).

Metacognitive awareness generates more constructive and responsive reading tradition. Pressley & Afflerbach (1995) found that efficient and constructively responsive readers were those with higher degree of metacognitive awareness. It is central to productive learning because it includes preparing and planning, monitoring, evaluating as well as selecting appropriate use of strategies in reading.

Several other studies have also demonstrated positive relationships between the use of metacognitive strategies and reading achievement (Bean et al, 1986; Cross & Paris, 1988; Palincsar & Ransom, 1988; Nist, Simpson & Hogrebe, 1985; Palmer & Goetz, 1985; Weinstein & Underwood, 1985). Gambrell & Heathington (1981), and Long & Long (1987) have observed that good readers characteristically monitor their comprehension and retention of material. On the other hand, poor readers have been described as not using metacognitive strategies effectively (Campione, 1987; Cohen, 1988). Skilled reading also requires the ongoing monitoring of comprehension, and regulation according to the goals of reading accomplished by the use of reading strategies (Alexander & Jetton, 2000; Cain, Oakhill, & Bryant, 2004). Paris and Winograd (1990) maintained that metacognition can promote academic learning and motivation. Metacognitive control during which the reader directs his reasoning process, is vitally important. Successful readers monitor their reading and the state of their learning; they plan strategies, adjust effort appropriately, and evaluate the success of their ongoing efforts to understand (Brown, Armbruster, & Baker, 1986). Training in metacognitive language learning strategies help learners develop their reading skills and raise their language proficiency levels (Palincsar, 1986; Green & Oxford, 1995; Carrell, Gajdusek & Wise; 1998).

Metacognitive Strategies and Self-efficacy

One of the benefits of using metacognitive strategies is the fact that it develops self-efficacy in learners, and it is directly connected to a good reading performance. Kanfer & Ackerman (1989) showed that students who have high self-efficacy were more likely to use metacognitive strategies when working on a task than those with low self-efficacy. Similarly, Bouffard-Bouchard, Parent & Larivee (1993) concluded that students with high self-efficacy used more metacognitive strategies than students with low self-efficacy. Pajares (2002) points out that regardless of prior achievement, higher self-efficacy is related to greater use of cognitive and metacognitive strategies.

Successful readers monitor their reading and the state of their learning; they plan strategies, adjust effort appropriately, and evaluate the success of their ongoing efforts to understand (Brown, Armbruster, & Baker, 1986). Metacognitive strategies include three skill techniques: planning, monitoring and evaluation (Cross & Paris, 1988). Before starting any reading assignment, students must be informed on how to improve and use their planning, monitoring and evaluation skills. Further, they can solve reading assignment themselves using a taught strategy.

Planning as a Metacognitive Strategy

Good readers use metacognitive strategies to have control over their reading. Before reading, they might clarify their purpose for reading and preview the text. During reading, they might monitor their understanding, adjusting their reading speed to fit the difficulty of the text and solving any comprehension problems they encounter. After reading, they check their understanding of what they read.

According to Zare-ee (2007), planning involves the selection of appropriate strategies and the allocation of resources that affect performance. For instance, language learners may make predictions before reading, and allocate time or attention selectively before beginning a task. Furthermore, planning is the process of thinking about and organizing the activities required to achieve a desired goal.

Monitoring as a Metacognitive Strategy

Monitoring is an invaluable tool for better controlling understanding in the process of reading. Comprehension monitoring is an aspect of metacognition, and Wagoner (1983) defined it as "an executive function, essential for competent reading, which directs a reader's cognitive process as he/she strives to make sense of incoming information" (p. 328). It enables students to determine whether the resources available to them are sufficient and are being well used, whether the ability they have are sufficient and suitable, and whether they are doing what they planned to do (Slife & Weaver, 1992). Therefore, monitoring refers to personal conscious awareness of comprehension and text performance. The capability to engage in periodic self-controlling while reading is a good example for monitoring.

Students may use several comprehension monitoring strategies:

- Identify where the difficulty occurs;
- Identify what the difficulty is;
- Restate the difficult sentence or passage in their own words;
- Look back through the text;
- Look for information in the text that might help them to resolve the difficulty;

Besides, it is of great importance to improve the questioning skills of students in the process of teaching metacognitive strategies. As Huitt (1997) defines students need to ask themselves the following questions in order to be successful in reading comprehension and solve comprehensive problems:

- What is the main idea of the text?
- How many supportive ideas are there in the reading text?
- Are the examples clear and understandable enough to enable me to understand the main idea?
- What are the important names, places and dates mentioned in the text?
- Do I need to read the text again? Should I check the dates, names, concepts in the text again?

Given questions are closely connected to the strategy given above. They will ensure that the students focus on the reading text. Studies on metacognition and reading comprehension reveal a strong relation between the use of strategies, awareness and reading comprehension (Garner, 1987). Such questions will ensure that the students focus on the reading text. Studies on metacognition and reading comprehension reveal the strong relation between the use of strategies, awareness and reading comprehension. Successful readers are more aware of strategic reading, and they probably use strategic reading techniques. There is an improvement of the awareness and reading skills of students who are trained on metacognitive strategies (Garner, 1987).

Evaluation as a Metacognitive Strategy

Another step for a student towards effective accomplishment of reading comprehension is evaluation. Evaluation is defined as appraising the conclusion and regulatory processes of an individual's learning (Wang et al, 2009). It looks at what students set out to do, what students have accomplished, and how they accomplished it. It can be informative. Many investigations indicate

that metacognitive knowledge and regulatory skills such as planning are related to evaluation and are among the most important factors that facilitate reading comprehension (Baker, 1989). Accordingly, regulatory competence promotes performance in a number of ways, involving a better use of cognitive resources such as attention, better utilization of strategies, and a greater awareness of comprehension breakdowns. Researchers (Cross & Paris, 1988; Brown & Palincsar, 1989) stated that if students know when and how to utilize regulatory skills and use them as one of the instructional programmes in the classroom, activities would positively affect their improvement in their comprehension tests. Regulatory process (planning, monitoring, and evaluation) needs to be emphasized in the learning process and would motivate learners to control their improvement in reading comprehension (Swanson, 1994).

As it was stated above, many young people in Georgia choose to learn English as a foreign language. Many of them aim to study abroad, and thus they need to possess skills necessary for the fulfillment of their desires. Those who decide to stay in Georgia and study at university have to pass Unified National Exams which require internationally accepted B1 level of English language knowledge. The tests are made up by the National Assessment and Examination Center. Reading comprehension is one of the essential parts of the test. Therefore, conducting research on reading skill is important.

The challenges that were revealed during the study were following:

- The teachers used outdated approaches and were oriented on short-term results; they did not prepare students for real life;
- Students lacked knowledge about metacognitive strategies and strategies themselves;
- Low-achievers did not use metacognitive strategies.

Research Methodology

The research questions that guide the study are:

1. Does metacognitive strategy training enhance reading skills in a foreign language?
2. How can metacognitive strategies facilitate comprehension while reading in a foreign language?
3. What strategies do teachers use in their efforts to facilitate reading comprehension?
4. How can metacognitive reading strategies be taught most effectively?

The research was based on quantitative approach, as the data obtained through experiment were necessary to shape and study the statistics of achievement and failures of learners. The research was conducted in one of Georgian public schools. The school is oriented on enriched and accelerated learning of physics and mathematics.The school is public, funded by the state. There were two (2) experimental (40 students) and one (1) control (20 students) groups. All three were mixed ability groups. Cambridge B1 Preliminary Tests for Schools[1] was used as a pre-, mid- and post-tests (Reading paper – 35 points maximum) to ensure a higher validity and reliability of the testing process as well as the accuracy of research outcomes. To get used to the Unified National Exam format reading sections reading sections were taken from the exam papers conducted in the previous

[1] Cambridge University Press. (2010). *Complete PET: Preliminary English Tests for Schools*. Cambridge: Cambridge University Press.

years at the exams. These reading tasks were practiced throughout the experiment period; this was done not only for the purpose of the experiment; the students had to actually sit the Unified National Exams (B1 level according to CEFR framework), and the intention was to prepare them.

The experiment lasted for 18 weeks – from 22.01.2017 to 25.05 2017. The English course-book, Gateway B1[2] (approved by the Ministry of Education and Science of Georgia) was used in both the control and experimental groups, and the learning objectives were defined in accordance with the National Curriculum of Georgia, the course-book and CEFR requirements. The control group (CG) was taught through the methodology and methods outlined in the course-book. The learning objectives for the two experimental groups (EG1 - experimental group 1 and EG2 - experimental group 2) were also defined the same way as in case of CG; however, the methodology and methods were determined by the researcher and largely relied on teaching through employing metacognitive strategies. EG1 and EG2 received explicit instruction on metacognitive strategies beginning from the first day of the course. The tests contained the following reading activities:

- ✓ Multiple choice - students had to read the text and to do the multiple-choice test. The test contained 8 sentences. Each sentence was provided with four answer-choices;
- ✓ Open-ended questions – students had to answer 6 questions about the text;
- ✓ Arrange the paragraphs in the correct order – the students had to arrange 6 paragraphs'
- ✓ Match the words with the definitions – students had to find definitions of 8 words from the text and match them;
- ✓ Complete the sentences about the text – students had to complete 7 sentences about the factual information of the text;
- ✓ True and false - the assignment contained 8 sentences;
- ✓ Match the questions with the paragraphs - students had to match 7 questions with the paragraph which contained the answer to the questions.

Experiment

After analyzing the pre-test results and the answers of the interview, a teacher training was conducted where using metacognitive strategies in reading comprehension was promoted. The teachers were encouraged to teach students the strategies of planning, monitoring and evaluating. They were advised to teach students how to think and encourage them to self-reflect. In this case the learners would be able to deal with different reading tasks independently.

Further, EG1 and EG2 members were taught explicitly on how to monitor their reading process, summarize, question, clarify, and draw inferences. The training procedure was performed in English.

The following reading strategies were taught explicitly:

- Think-aloud
- Concept mapping
- Note-taking

[2] Spencer, D. (2011). *Gateway B1 Student Book: ELT Exam Series.* London: Macmillan Education.

- Online diary (students wrote after tests. They reflected on the strategies that they had used in the text. They wrote which one was the most or the least successful)
- Wrappers (a wrapper is an activity at the end of the lesson when the students write 3 key ideas associated with the topic covered at the lesson; it fosters students' metacognition).
- Brainstorming, making predictions about the text according to the title or some words taken randomly from the text
- Generalizing the text, connecting with real life experiences
- Modelling by teacher for students
- K-W-L chart (graphic organizers that help students organize information before, during, and after a unit or a lesson. K-W-L Chart tracks what a student knows (K), wants to know (W), and has learned (L) about a topic.)
- Paraphrasing
- Think-Pair-Share (it is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to think individually about a topic or answer to a question and then share ideas with classmates. The strategy can promote and support higher level thinking.)
- One Sentence Summary

Quantitative Data Analysis – English Language Tests and Questionnaires

The overall evaluation of the test results allows to make conclusion that the majority of mistakes were made in the activity 'connecting questions with the paragraph'. Also identifying true and false sentences caused problems in some cases. The test result analysis revealed that students found it difficult to deal not with the questions including factual information, but with inferring authors' opinion. Apparently, students did not have previous experience with the activities where they had to employ logical thinking. Thus, we may assume that students lacked relevant skills of fulfilling the activities which generally require logical thinking. Accordingly, it was easy to observe that the language learners did not go deep into the text once they lacked expertise with this particular type of exercises.

The test scores obtained in pre-, mid- and post-test results in CG, EG1 and EG2 were used to carry out statistical analysis in order to understand whether the treatment introduced in the teaching and learning process was statistically significant, or judging more generally, has pedagogical and methodological value at all. While presenting the data, the coding of students' names was used in order to avoid disclosing specific names of individual students. The logic of the coding is as follows: the control group was labelled as CG; as for experimental groups, as there were two of them, they were labelled accordingly – EG1 (experimental group 1) and EG2 (experimental group 2); students in each group were listed randomly, however, once the initial list was created, the code for each individual student was used with accurate consistency, e.g. CG_S1 (student number 1 in the control group), or EG1_S4 (student number 4 in the experimental group number 1). The table below presents pre-, mid- and post-test results from CG, EG1 and EG2.

Table 1. Control and Experimental Groups Test Results

Control Group				**Experimental Group 1**				**Experimental Group 2**			
Students	**Pre-test**	**Mid-test**	**Post-test**	**Students**	**Pre-test**	**Mid-test**	**Post-test**	**Students**	**Pre-test**	**Mid-test**	**Post-test**
CG_S1	11	12	19	EG1_S1	17	19	28	EG2_S1	22	26	29
CG_S2	11	15	22	EG1_S2	23	absent	30	EG2_S2	30	35	35
CG_S3	20	22	24	EG1_S3	26	30	32	EG2_S3	31	35	35
CG_S4	15	16	19	EG1_S4	13	18	25	EG2_S4	31	33	34
CG_S5	17	20	21	EG1_S5	30	34	32	EG2_S5	25	30	31
CG_S6	18	19	25	EG1_S6	27	25	30	EG2_S6	18	24	29
CG_S7	24	26	31	EG1_S7	21	27	31	EG2_S7	30	35	35
CG_S8	26	29	30	EG1_S8	20	22	30	EG2_S8	23	21	27
CG_S9	19	20	24	EG1_S9	29	absent	34	EG2_S9	11	16	25
CG_S10	20	20	26	EG1_S10	17	20	28	EG2_S10	29	27	34
CG_S11	32	32	34	EG1_S11	22	32	33	EG2_S11	22	23	35
CG_S12	25	28	32	EG1_S12	32	32	34	EG2_S12	30	31	31
CG_S13	17	21	24	EG1_S13	19	26	absent	EG2_S13	29	33	34
CG_S14	31	31	33	EG1_S14	absent	19	22	EG2_S14	30	32	33
CG_S15	13	16	24	EG1_S15	21	29	35	EG2_S15	19	28	32
CG_S16	absent	13	20	EG1_S16	24	29	32	EG2_S16	32	35	35
CG-S17	30	29	32	EG1-S17	26	31	34	EG2-S17	15	18	26
CG_S18	14	18	absent	EG1_S18	17	18	28	EG2_S18	33	33	35
CG_S19	26	27	35	EG1_S19	24	25	27	EG2_S19	29	31	32
CG_S20	30	absent	32	EG1_S20	24	32	34	EG2_S20	15	24	27

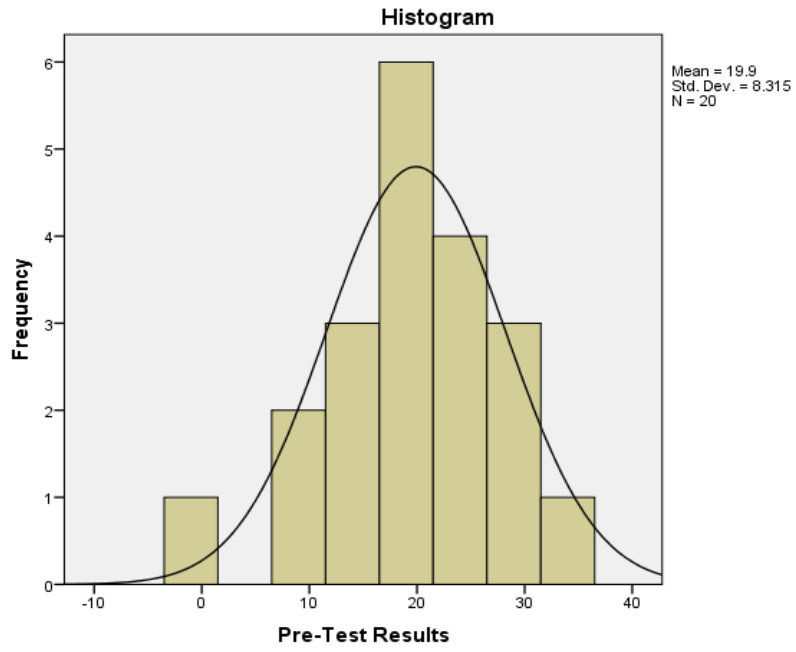
Table 2. Paired Samples Statistics for Control Group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Results	19.90	20	8.315	1.859
	Mid-Test Results	20.65	20	7.909	1.769
Pair 2	Mid-Test Results	20.65	20	7.909	1.769
	Post-Test Results	25.30	20	8.125	1.817
Pair 3	Pre-Test Results	19.90	20	8.315	1.859
	Post-Test Results	25.30	20	8.125	1.817

As table 2 shows, there is improvement in CG in pre-, mid-, and post-test results: the mean of the pre-test was 19.90 and the mean of the post-test was 25.30. The standard deviation in all three tests is around 7-8 points which might be assumed quite high, however, a normality test is necessary to see how much variance there was in the group throughout the pre- and post-tests.

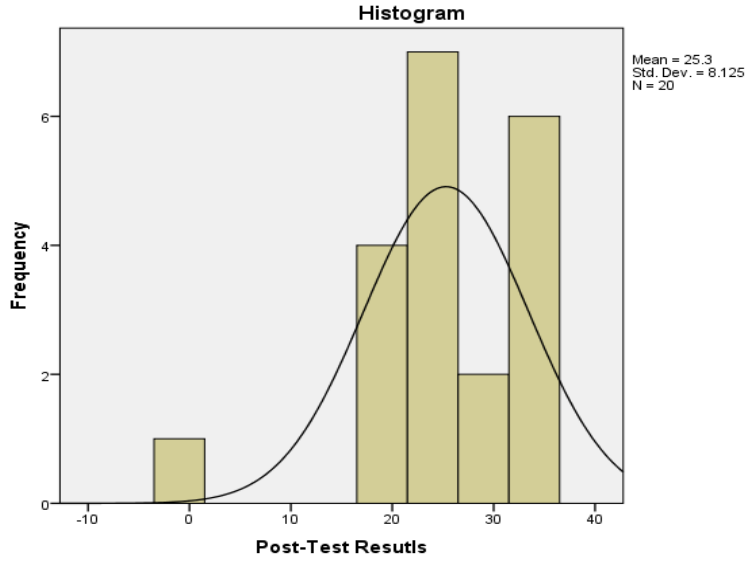
Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	Pre-Test Results	-.40	11.00	14.25	19.50	26.00	30.90	31.95
	Post-Test Results	.00	19.00	21.25	24.50	32.00	33.90	34.95
Tukey's Hinges	Pre-Test Results			14.50	19.50	26.00		
	Post-Test Results			21.50	24.50	32.00		



Graph 1. Control Group Normality Test Results for Pre-test

As graph 1 shows, though the standard deviation from the mean is 8.3 points, the control group test results are normally distributed and there is not much skewness in the group; most of the test the results were falling within one standard deviation from the mean (almost 65% of the learners obtaining the scores close to the mean).



Graph 2. Control Group Normality Test Results for Post-test

As graph 2 shows, the skewness (1.717) is much higher for post-test results (though still falling within the acceptable range of +/- 2) and the kurtosis is also quite high - 4.89; however, the test results are skewed to the right meaning that most of the control group participants obtained positive results in their post-tests.

Table 3. Control Group Pre-, Mid-, and Post-test Paired Samples test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Results - Mid-Test Results	-.750	8.091	1.809	-4.537	3.037	-.415	19	.683
Pair 2	Mid-Test Results - Post-Test Results	-4.650	8.774	1.962	-8.756	-.544	-2.370	19	.029
Pair 3	Pre-Test Results - Post-Test Results	-5.400	6.516	1.457	-8.450	-2.350	-3.706	19	.001

The control group paired samples test shows that standard deviation has reduced in the amount while comparing the pre- and post-test results; however, the results are still scattered; still, when the research sample is relatively small, as is the case with the control group involved in the research, higher variance might be observed. This test shows valuable results, as the significance level (or p value) for the pre- and post-test paired samples test is 0.001, and when significance level is less than 0.05, it can be concluded that there is statistically significant difference between the two cases (pre- and post-tests).

Once the test results showed much of a variance in the test results, it is advisable to analyse the internal consistency of the scores which the students in the control group obtained in the pre-, mid- and post-tests. Table 4 presents the internal consistency analysis of the test results looking at Cronbach's Alpha.

Table 4. Control Group Pre-, Mid- and Post-test Scores Internal Consistency Test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.774	.772	3

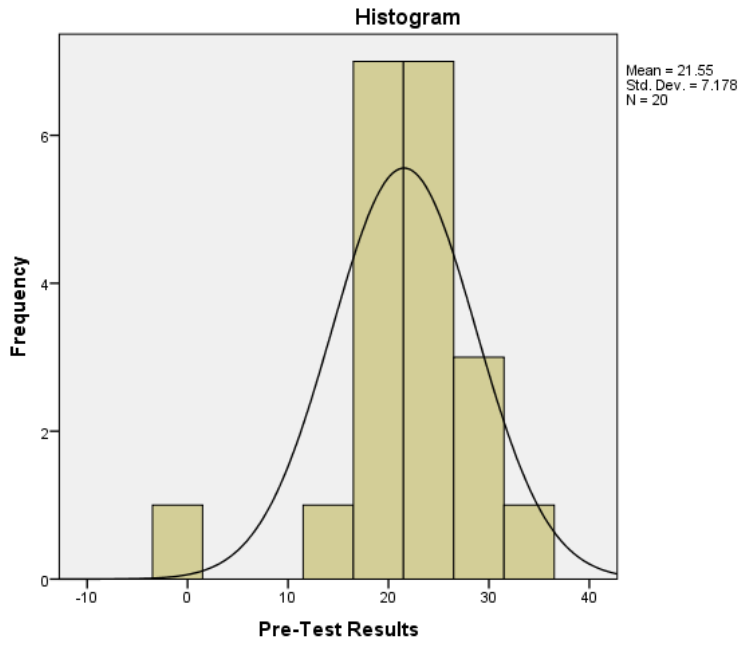
The table shows that Cronbach's Alpha is slightly larger than 0.7, which proves that though there is much variance of test score results among the students, still there is consistency with the positive trend in test scores for each individual learner.

Table 5. Paired Samples Statistics for Experimental Group 1

Paired Samples Statistics

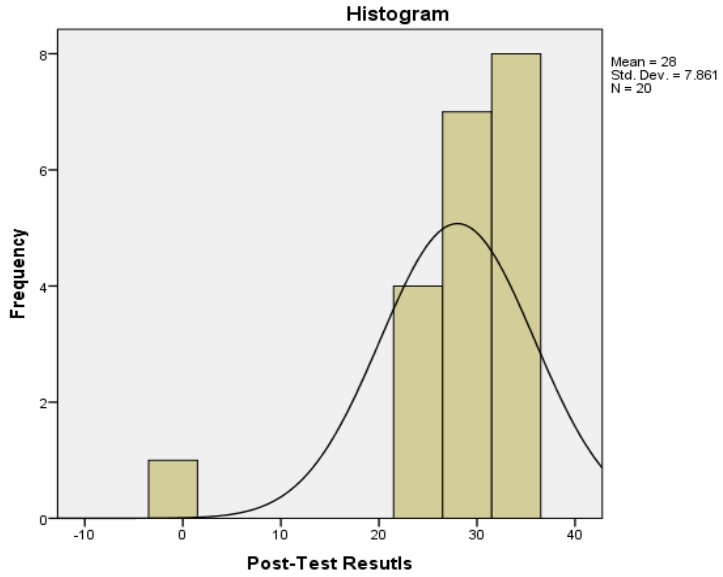
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Results	21.55	20	7.178	1.605
	Mid-Test Results	23.00	20	9.706	2.170
Pair 2	Mid-Test Results	23.00	20	9.706	2.170
	Post-Test Results	28.00	20	7.861	1.758
Pair 3	Pre-Test Results	21.55	20	7.178	1.605
	Post-Test Results	28.00	20	7.861	1.758

Table 5 shows that there is consistent improvement in EG1 in the pre-, mid-, and post-test results: the mean of the pre-test was 21.55, which is close to the control group pre-test results, and the mean of the post-test is 28, which is significantly higher than the control group results. Similar to the control group, standard deviation is quite high in EG1, but as mentioned earlier, with smaller groups the trends of similar data-set is more scarce, hence the scattered data-set.



Graph 3. Experimental Group 1 Normality Test Results for Pre-test

EG1 showed results similar to CG in the pre-test, and though the standard deviation is 7, and there is skewness (1.558 which is within the range of +/- 2), almost 70% of the learners obtained scores close to the mean. The standard deviation and skewness rate is quite normal for this sample size, as in small groups, as was the control group in the given experiment (20 individuals), even one outlier can significantly influence the normal distribution of test scores.



Graph 4. Experimental Group1 Normality Test Results for Post-test

Graph 4 shows that the EG1 post-test results are skewed to the right, however, there is much increase in the mean and the results are skewed to the positive trend, which shows that there is a significant improvement in the test results.

Table 6. Experimental Group 1 Pre-, Mid-, and Post-test Paired Samples test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Results - Mid-Test Results	-1.450	10.802	2.415	-6.505	3.605	-.600	19	.555
Pair 2	Mid-Test Results - Post-Test Results	-5.000	12.013	2.686	-10.622	.622	-1.861	19	.078
Pair 3	Pre-Test Results - Post-Test Results	-6.450	7.695	1.721	-10.051	-2.849	-3.749	19	.001

The EG1 paired samples test shows that the standard deviation reduced significantly in the post-test compared to the pre-test results which means that there is much less variance in individual students' achievement and the test results evened out, and there is a statistically significant difference (0.001) in the pre- and post-test results.

It is also important to look at the internal consistency of the EG1 pre-, mid- and post-test results.

Table 7. Experimental Group 1 Pre-, Mid- and Post-test Scores Internal Consistency Test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.471	.506	3

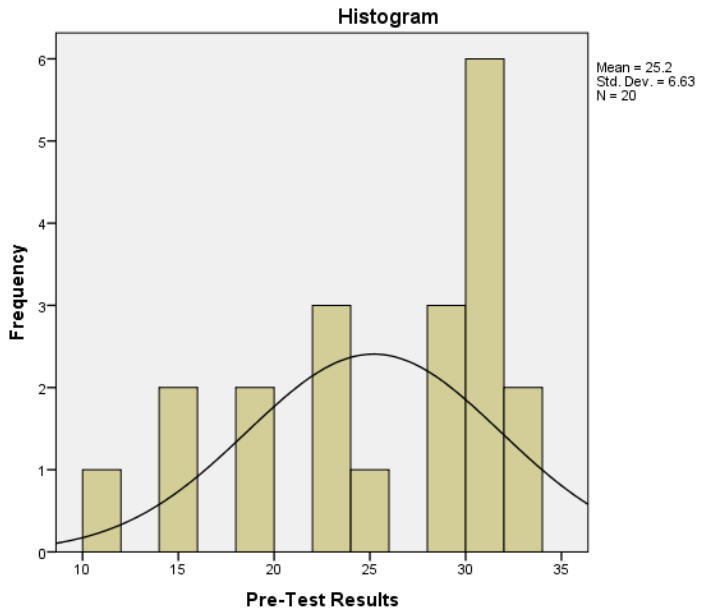
Cronbach's Alpha is less than 0.7 in case of EG1, but it might be affected by the fact that 4 students skipped at least one of the tests, which finally resulted in a relatively lower rate of consistency; however, the analysis of individual student's test results shows a high level of consistency throughout the treatment period.

Table 8. Paired Samples Statistics for Experimental Group 2

Paired Samples Statistics

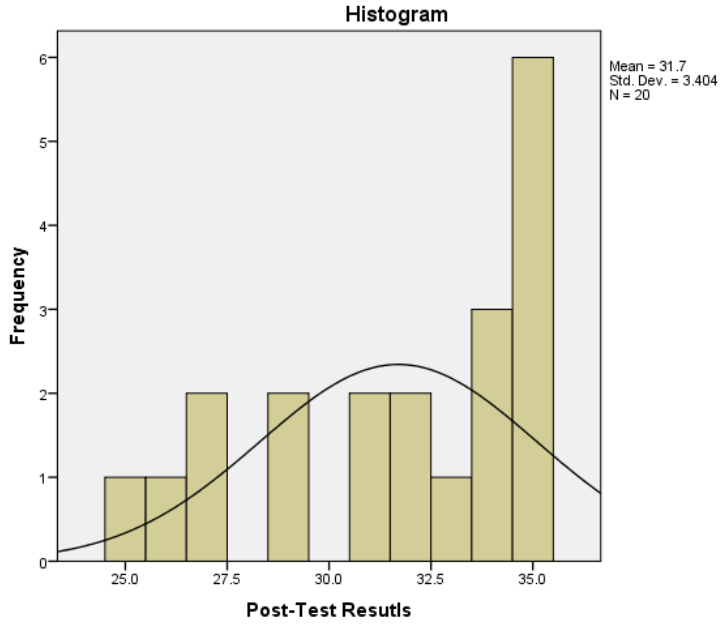
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Results	25.20	20	6.630	1.483
	Mid-Test Results	28.50	20	5.889	1.317
Pair 2	Mid-Test Results	28.50	20	5.889	1.317
	Post-Test Results	31.70	20	3.404	.761
Pair 3	Pre-Test Results	25.20	20	6.630	1.483
	Post-Test Results	31.70	20	3.404	.761

Table 8 shows that there is also a considerable improvement in the EG2 pre-, mid-, and post-test results: the mean of pre-test was 25.20, which is higher than for both CG and EG1. The standard deviation for pre-test shows that there is much variance among individual students' results; however, the standard deviation reduced significantly in the post-test equaling to 3.40; overall, the whole group's performance increased with much consistency and the mean of the post-test is close to the maximum overall point in the test, which is 35 points.



Graph 5. Experimental Group 2 Normality Test Results for Pre-test

The EG2 pre-test normality test results showed much less skewness -.780 and kurtosis -0.640 than in the CG and EG1 which means that in the EG2 students with relatively equal language proficiency level happened to be grouped. Thus, it was important for the experiment if the trend would be retained and everyone would show consistent enhancement of reading skills.



Graph 6. Experimental Group2 Normality Test Results for Post-test

Graph 6 shows that the EG2 post-test results are skewed to the right, however, similar to EG1 there is much increase in the mean, which is more important, as in a small group like EG2 consisting of only 20 individuals, outliers can significantly influence normality test results. Accordingly, it is important to state that the mean of the post-test results is 32.50 which is close to the EG2 post-test mean – 31.70.

Table 9. Experimental Group 2 Pre-, Mid-, and Post-test Paired Samples test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Results - Mid-Test Results	-3.300	2.975	.665	-4.693	-1.907	-4.960	19	.000
Pair 2	Mid-Test Results - Post-Test Results	-3.200	3.533	.790	-4.854	-1.546	-4.050	19	.001

Pair 3	Pre-Test Results - Post-Test Results	-6.500	4.186	.936	-8.459	-4.541	-6.944	19	.000

The EG2 paired samples test shows that the standard deviation reduced significantly in the post-test compared to the pre-test results which means that there is much less variance in individual students' achievement and the test results evened out, and the difference between the pre- and post-test results is statistically highly significant.

As for the internal consistency of EG2 pre-, mid- and post-test results, table 10 will summarise the results.

Table 10. Experimental Group 2 Pre-, Mid- and Post-test Scores Internal Consistency Test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.813	.914	2

Cronbach's Alpha is 0.813 in case of EG2, which shows that there is high level of internal consistency between pre- and post-test items. Overall, EG2 results are both statistically significant and consistent internally which proves that treatment introduced in EG2 did prove both effective and efficient.

Test results analysis showed that students had problems with reading comprehension. Main mistakes were in multiple choice, true and false sentences, open-ended questions and matching words with explanations. The results of the post-experimental test showed better results for all 3 groups. However, the experimental groups' members had higher points. The results attained in the study showed that there was an increase in students' reading score; once metacognitive strategies were taught to these groups, better test results and the statistical analysis of the test results support the claim that an increase in test achievement is to be linked to the received instructions on metacognitive strategies and their intensive use in reading tests in English.

It can be concluded that after 4 months of metacognitive awareness training, the experimental group students' ability to read increased. This result shows the positive effect of training students in metacognitive awareness.

Limitations of the study

Only one school was observed, and though validity and reliability of the tests are not to be questioned, generalization of research findings can still be problematic. Besides, most students claimed that, besides school, they studied English with private tutors. Accordingly, the results of the tests can be influenced by face-to-face tutoring, which acted as an extraneous variable throughout the whole study, and thus generalization might be problematic. However, still it might be said that as most of the students took individual lessons from private tutors, this factor (extraneous variable) might have the same effect over all the participants of the experiment.

Conclusions and recommendations

Teaching metacognitive skills is a valuable use of instructional time for EFL teachers. When learners reflect upon their learning strategies, they become better prepared to make conscious decisions about what they can do in order to improve their learning. Strong metacognitive skills empower language learners. The study revealed a strong positive relationship between the reading performance of learners and their level of metacognitive awareness. The experimental group learners employed metacognitive strategies more consciously, more purposefully.

Developing metacognitive skills provides a key to learners to perceive their own learning as active and not passive. Therefore, the crucial role of metacognition in successful learning clarifies how students must be taught, use metacognitive control, and apply their cognitive resource in a better way.

The inferences that can be drawn from the reviewed literature in terms of studies related to reading strategies is that the intervention of teaching metacognitive strategies has advantages for EFL learners. One of the keys to develop learners' reading comprehension in the target language is to learn what strategies are, when and how to apply them, and, more importantly, how to evaluate the use of these strategies. In the process of learning, instructors attempt not only to engage learners, but also to encourage them to be active in this process.

As for recommendations, students should definitely be taught strategies of reading. Students need to be informed about the steps they have to take before, during and after a reading activity, and then they need to practice the recommended strategies. Students should be informed about how to monitor their reading activity and how to prepare an evaluation plan after the reading activity. They should be guided in preparing a reflective diary and in the questioning of themselves. Students should be taught the steps to be taken and the strategies to be adopted in guessing the end of a text and finding its main idea.

A greater number of long-term studies should be held on learning a foreign language, problem-solving and reading comprehension, which is in those areas where metacognitive strategies are used efficiently, and measures aimed at the implementation of those strategies should be developed.

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