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| RESEARCH ARTICLE

Investigating the Effect of Reciprocal Teaching on Summarizing among Moroccan College Students

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| ABSTRACT
The current quasi-experimental study examines the differential effect of Reciprocal Teaching (RT) on summarizing among Moroccan EFL university students. Sixty participants who took part in this study were tested prior to instruction (pre-test) and immediately after the training (post-test). The experimental group were trained using RT, whereas the control group did not receive any specific treatment. The training lasted three weeks, in which participants were requested to provide a precis of the three articles covered in training based on five macro-rules, including deletion of trivia, deletion of redundancy, superordination, selection or invention of a topic sentence (see Brown & Day, 1983). The results showed that all participants performed the same in the pre-test, but the experimental group scored higher than the comparison group in the immediate post-test.

| KEYWORDS
Reciprocal teaching, summarizing, and training.

| ARTICLE INFORMATION
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1. Introduction

The current quasi-experimental study falls within the umbrella of metacognition and reading. It explores the differential effect of reciprocal teaching on summarizing among Moroccan EFL college students at the National School of Applied Sciences in Berrechid. Several studies were carried out to replicate or extend the original study of reciprocal teaching (e.g., Palincsar & Brown, 1984; Alfassi, 1998; Spivey & Cuthbert, 2006; El Hamydy & Brigui, 2022). All these researchers reported that reciprocal teaching enhances learners' comprehension and understanding of reading texts. Most of these studies were carried out in an ESL context, and their findings confirm the effectiveness of reciprocal teaching in improving learners' reading skills. All these factors indicate that poor reading comprehension can be subject to enhancement and remediation using reciprocal teaching in the classroom.

Previous research suggested that reciprocal teaching improves comprehension-monitoring skills, including summarizing (Palincsar & Brown, 1984; Alfassi, 1998; Hart & Speece, 1998; Mandel et al., 2013; El Hamydy & Brigui, 2022). Hence, this study investigates the differential effect of reciprocal teaching on summarizing among Moroccan EFL college students. Also, similar research dealing with Moroccan participants hardly exists in this realm of research. This study thus seeks to explore the impact of RT on Moroccan EFL college students' summarizing skills. In order to achieve these objectives, the following research questions have been formulated:

1- Is there a significant difference between the control group and the experimental group in the pre-test?
2- Is there a significant difference between the control group and the experimental group in the post-test?

2. Literature Review

The present study is conducted within the area of reading and metacognition, and it examines the differential effect of reciprocal teaching on summarizing.

Summarizing is by far one of the most important strategies to boost learners' reading comprehension. While summarizing, students are required to focus on the gist of the text at hand. In this respect, 'good' learners tend to omit trivial information and keep vital information that makes up the bulk of a text. The reason why summarizing is an effective strategy in reading comprehension is that it helps readers to understand better, retain and recall information. In other words, the teaching of summarizing strategies in the classroom is of great importance in internalizing and synthesizing information, highlighting and identifying key concepts while reading. According to Dole et al. (1991), summarizing is defined as follows:

> *Often confused with determining importance, summarizing is a broader, more synthetic skill for which determining importance is a necessary but not sufficient condition. The ability to summarize information requires readers to sift through large units of text, differentiate important from unimportant ideas, and then synthesize those ideas and create a new coherent text that stands for, by substantive criteria, the original. This sounds difficult, and the research demonstrates that, in fact, it is. (p. 244)*

Summarizing is considered a challenging task for most students, though. Hence, teachers are required to provide adequate instruction and enough practice to assist their learners in generating decent summaries of reading texts. Consequently, both instruction and practice are crucial in fostering students' ability to provide accurate summaries of reading texts and consolidating their overall comprehension and recall of information. Two main approaches have been employed to teach learners how to summarize a text. The first approach is rule-governed, for learners adhere to some linear procedures to write a summary of a text. For instance, McNeil & Donant (1982) adopted the following rules from the work of Brown et al. (1981) and Kintsch & Van Dijk (1978):

Rule 1: Delete unnecessary material.
Rule 2: Delete redundant material.
Rule 3: Compose a word to replace a list of items.
Rule 4: Compose a word to replace individual parts of an action.
Rule 5: Select a topic sentence.
Rule 6: Invent a topic sentence if one is not available.

To provide well-written summaries, students need to comply with the aforementioned rules according to this approach. Teachers are thus required to provide their students with adequate training, modelling, and guided practice to acquaint them with the use of these rules in their compositions.

Cunningham (1982) developed another approach to teaching summarizing in reading comprehension. This approach is labelled the GIST procedure, and it is holistic and interdisciplinary. The GIST is an acronym that stands for Generating Instructions between Schemata and Texts. Evidence suggests that the GIST remains a vital summarizing strategy in helping students to generate decent summaries. According to this approach, students would better start with single sentences before moving to the overall paragraph (ibid). They should not exceed 15 words while summarizing a reading passage. This implies that learners need to focus on the gist of the text and avoid trivial or redundant ideas. Teachers adopting the GIST approach are required to model how it operates before assigning small group tasks and individual assignments.

Several studies were conducted to examine the effectiveness of these two approaches. For example, Bean and Steenwyk (1984) stated that both approaches proved efficient in improving sixth-grade students' written summaries of text and boosting their overall reading comprehension. Subjects who received instruction in the approaches in question produced decent summaries compared to participants in the control group. Brown and Day (1983) also advanced that students who were trained to apply the five macro-rules in summarizing outscored those in the comparison group. In the present study, the summarizing skill is operationalized as follows:

Summarizing is concerned with writing a brief, coherent precis (summary) of the article (s) based on five macro-rules, such as deletion of trivia, deletion of redundancy, super-ordination, selection, or invention of a topic sentence (see Brown & Day, 1983).

3. Methodology

This section is concerned with the methodology of the present study. It explains in detail the design adopted in this study, describes the participants and outlines the instruments as well as the procedure.

3.1 Research Design

This study has a quasi-experimental design because there is no random assignment. To this end, two intact classes from the National School of Applied Sciences in Berrechid participated in this study. One intact class consisting of 30 students served as an experimental group, and the other intact class involving 30 students functioned as a control group. The statistical test is an independent t-test since it involves two dissimilar groups (Table 1).

Groups	Pre-test	Treatment	Post-test
Experimental	T1	Reciprocal Teaching	T2
Control	T2	Traditional way	T2

Table 1: The design of the study

3.2 Participants

3.2.1 Subjects

The participants of this study are sixty students from the National School of Applied Sciences in Berrechid. The subjects were native speakers of Moroccan Arabic, except three students who came from Senegal, Mali, and the Democratic Republic of the Congo. It is worth noting that the participants were not taking extra courses in English during the training, and they were not involved in any previous experiment. This suggested that students were homogeneous and equal at the onset of the training. The participants constituted two intact classes— an experimental and a control group studying 90-min per session twice a week. The experimental subjects were trained using reciprocal teaching, while the control group did not receive any specific treatment.

3.2.2 Instructor

The instructor (i.e., the researcher) is 28 years old and has been teaching in high school for five years. He taught his own classes, a fact that helped facilitate communication and interaction between students and their teachers and motivated them to be more responsive to the training.

3.3 The instruments

The instruments used in this study are a reading selection, lesson plans, pre-test, and post-test.

3.3.1 The Reading Selection

The instructor (i.e., the researcher) used three expository reading articles of approximately five hundred words in the intervention, in addition to the reading articles used in the pre-test and the post-test. The articles were chosen from the Upper-Intermediate Market Leader book series (Cotton, Falvey, & Kent, 2011) and covered a wide range of topics as different as communication, management, organization, building trust and relationships, among others. The texts were submitted for the Fry Readability Formula analysis to see if they matched students' levels (Fry, 1977). Students who were trained in reciprocal teaching were asked to write a precis of the articles in question based on five macro-rules, such as deletion of trivia, deletion of redundancy, superordination, selection, or invention of a topic sentence.

3.3.2 Texts used during the pre-test and post-test

The texts employed in the pre-test and the post-test were similar in terms of level and difficulty. The pre-test text shed light on management styles, leadership skills and qualities, etc. The post-test text dealt with communication in the workplace. These texts were analysed by means of the Fry Readability Formula (Fry, 1977) in terms of lexical density, linguistic difficulty, complex grammatical structures, etc.

3.3.3 Lesson Plans

The instructor (i.e., the researcher) made three lesson plans for the articles used in training. The lesson plans added further insights on how to teach the training, and they helped in avoiding any teacher variable.

3.3.4 The pre-test and post-test

Given the fact that this study did not involve any random assignment, a pre-test was administered at the beginning to explore the level and congruity of the participants. Immediately after the training, students were given a post-test to compare their scores and ensure whether the treatment was effective.

3.3.5 Testing Methods

The test involved one task— summarizing, wherein students were requested to read the article (s) and write a precis based on five macro-rules, including deletion of trivia, deletion of redundancy, superordination, selection or invention of a topic sentence (Brown & Day, 1983).

3.3.6 Piloting of the tests

Piloting is basically used to predict and anticipate the difficulties students might encounter on the day of taking the test. These would include the timing of the test, the construction of the question (s), length, linguistic difficulty, etc. The overall aim is to design a test that fits the target population and objectives of the study. The pre-test and post-test were tested on a small group of engineering students studying at the National School of Applied Sciences in Berrechid.

3.4 Procedures

There are four main stages involved in the current study, including the preparatory stage, the administration of the pre-test, the training, and the post-test administration.

3.4.1 Preparatory stage

Before the training, the researcher reflected on the rationale for, significance and objectives of the study, implementations, and procedures. This opened room for improvement, remediation, and modification.

3.4.2 The pre-test administration

Before the administration of the pre-test, the subjects were informed of the study's timing, length, and significance. They were also assured that their scores would be kept strictly confidential and used solely for research purposes. Once given the pre-test, they were asked to read the article carefully and write a decent summary.

3.4.3 The Intervention

3.4.3.1 The Experimental Group

Thirty subjects took part in the training, which lasted three weeks. The participants were trained using reciprocal teaching.

3.4.3.2 The Training Sessions

During the first training session, the instructor asked the students about the difficulties they encountered in the pre-test. The issues the subjects faced in the pre-test were attributed to their lack of reading techniques to write a precis of the text. After that, the instructor introduced students to Reciprocal Teaching and how it operates. Students then observed how the instructor modelled reciprocal teaching. For example, in teaching how to provide a summary of the text, students were informed about summarizing the main idea of each paragraph in the article.

During the second training session, the subjects were given the first article entitled 'Why it pays to put workers in the picture', which sheds light on interaction and communication with employees. It talks about the added value of integrating workers into the decision making process. The instructor began by reminding students of RT and how it works. After that, he distributed the worksheets among the students. Students were requested to write a precis of the article in question based on five-macro rules, such as deletion of trivia, deletion of redundancy, superordination, selection, or invention of a topic sentence (Brown & Day, 1983). The instructor adopted the same procedure with the remaining two reading articles. The assistance, provision of support and guidance from the instructor decreased gradually during the training. At the end of the intervention, most students could provide decent summaries of the article (s), assuming their control over the use of reciprocal teaching in summarizing.

3.4.4 Control group

The control group was also chosen from the National School of Applied Sciences in Berrechid. It involves one intact class, which consists of 30 participants (16 females and 14 males). The instructor (i.e., the researcher) taught the control group bearing in mind the design, rationale, and significance of the study. Besides that, the control group received three sessions (twice a week), in addition to two more sessions devoted to the pre-test and the post-test. The reading materials were also chosen based on their relevance to students' levels and interests. It is to be noted that the three reading articles were taught in the same order as that followed by the reciprocal group.

3.4.5 Post-test administration

Immediately after the end of the intervention, the subjects in both groups were given the post-test. The latter was roughly identical to the pre-test they took at the onset of the training.

3.5 Scoring and Data analysis

This part is concerned with the scoring and data analysis. It describes how the test was scored and then how the data were submitted for analysis using SPSS.

3.5.1 Scoring

The test consists of one task—summarizing. It was given a sum total score of five points. Note that subjects who did not provide complete answers were allocated a point that corresponded to the quality and quantity of their answers. In addition, grammar and misspellings were discounted. Note that this test is subject to the risk of the single-effect method. In addition to the researcher, another independent rater scored the tests. He was given the scoring criteria and was requested to read the article before scoring.

3.5.2 Data analysis

Both descriptive and inferential statistics were used to analyse the data. We ran an Independent T-test to explore the difference (s) between the experimental and control group.

4. Results and Discussion

4.1 Presentation and analysis of the results

Before the analysis of the data, it is worth mentioning that the statistical data of the current study is quantitative. Participants in the experimental and control group took a pre-test before the intervention and a post-test after it.

4.1.1 Means and gain scores

Both descriptive and inferential statistics were used to answer the research questions. Descriptive statistics showed significant differences between the means of both groups.

4.1.2 Descriptive Statistics

The results of descriptive statistics demonstrate that all participants performed the same in the pre-test, which suggests that the experimental and the control group were homogeneous and similar before the training. Nonetheless, the findings of the post-test indicate that reciprocal participants scored higher than those in the comparison group. This entails that the students receiving instruction in reciprocal teaching gained in summarizing after the intervention (see Table 2 and Figure 1). The results of descriptive statistics are not sufficient. It remains, then, to run inferential statistics to confirm if the differences in groups' means are statistically significant per see.

Group	N	Pre-test		Immediate post-test	
		M	SD	M	SD
Ex group	30	2.53	.50	3.83	.61
Con group	30	2.40	.56	2.36	.64

Table 2: Numerical summary of the data set.

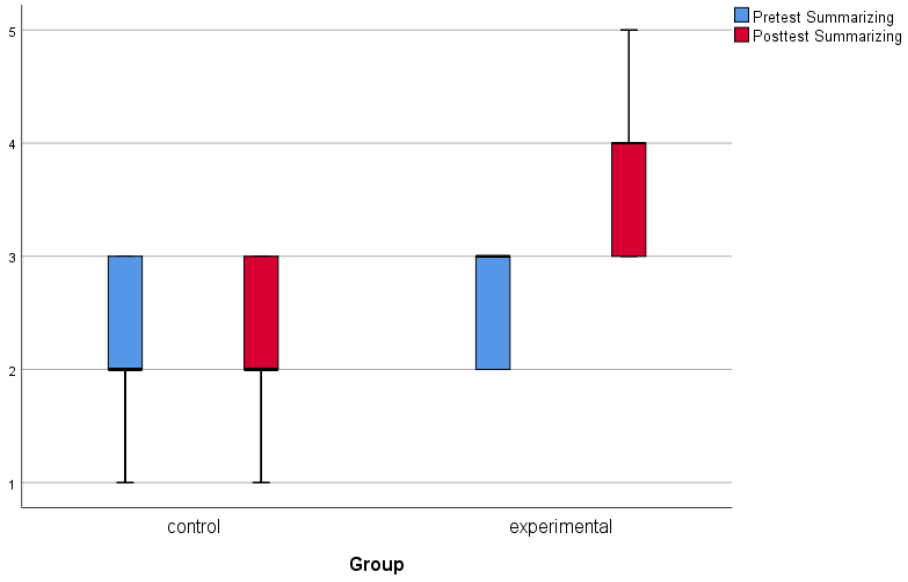

Figure 1: Boxplots of the pre-test and immediate post-test.

4.2 Inferential Statistics

4.2.1 The Independent T-test

Before running the independent t-test, let us check whether the data sets observe the assumptions of the independent t-test, including the normality of the data and equal variances.

4.2.2 Normality of the data

Looking at the data numerically in Table 3, there is normal distribution in the pre-test of both groups since the p-value is greater than the pre-defined significance level.

Tests of Normality

	Group	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Pretest Summarizing	control	.328	30	.000	.720	30	.000
	experimental	.354	30	.000	.637	30	.000
Posttest Summarizing	control	.291	30	.000	.753	30	.000
	experimental	.302	30	.000	.785	30	.000

a. Lilliefors Significance Correction

Table 3: Tests of Normality

Formal tests like the Kolmogorov–Smirnov and the Shapiro–Wilk often suffer from low power to detect violations (Wilcox, 2003), and therefore we cannot be sure if the data is normally distributed by only looking at the numerical results of these tests. We have to examine graphics too.

The histograms in Figure 2 show that the data are normally distributed (the median is centred in the boxes, and there are equal-length tails or whiskers on both ends of the boxes). For the pre-test data, all participants are symmetrical around the median; that is, most participants scored the same. However, the control group shows some non-normality because outliers are shown, or boxes are asymmetrical around their medians. We also see some clear skewness in the X.

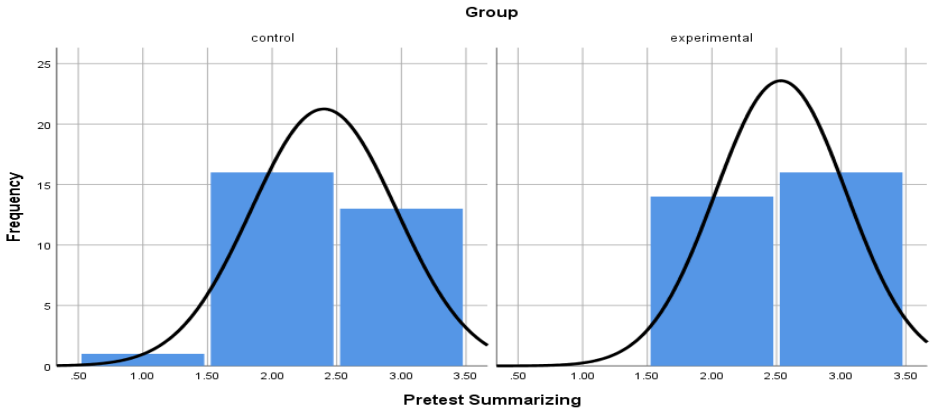

Figure2: Group pre-test histograms

4.2.3 Homogeneity of variances

According to Table 4, the assumption of homogeneity of variances is met since the p-value is greater than the pre-defined significance level.

		Levene's Test for Equality of Variances F	Sig.
Pretest Summarizing	Equal variances assumed	.383	.538
	Equal variances not assumed		
Posttest Summarizing	Equal variances assumed	.315	.577
	Equal variances not assumed		

Table 4: Leven's Test for Equality of Variances

4.2.4 Independent T-test

The initial description of the data sets demonstrates that reciprocal participants outscored the comparison group (the control group, M= 2.36, Sd= .64, N= 30); the experimental group, M= 3.83, Sd= .61, N= 30) (see Table 2). Yet, we ran the independent t-test to uncover the significant difference (s) between both groups.

The analysis of the Independent T-test revealed statistically significant differences between the experimental and control group in the post-test. With a t= - 8.994, df= 58, P= .000 and 95% CI= -1.793, -1.140, the null hypothesis, which says there is no significant difference between both groups, is therefore rejected (see Table 5).

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pretest Summarizing	Equal variances assumed	.383	.538	-.963	58	.339	-.13333	.13841	-.41039	.14372
	Equal variances not assumed			-.963	57.379	.339	-.13333	.13841	-.41045	.14379
Posttest Summarizing	Equal variances assumed	.315	.577	-8.994	58	.000	-1.46667	.16306	-1.79308	-1.14026
	Equal variances not assumed			-8.994	57.844	.000	-1.46667	.16306	-1.79309	-1.14024

Table 5: The Independent Sample T-test

4.3 Discussion

This section is concerned with the discussion of the findings in light of previous research.

Hypothesis 1: There is no significant difference between the control group and the experimental group in the pre-test.

According to the first hypothesis, the experimental and control group performed the same in the pre-test. This suggests that all participants had almost the same level at the beginning of the training. In essence, it was theorized that the reciprocal and comparison group would perform differently in the pre-test. However, the results of both descriptive and inferential statistics revealed that subjects' scores were roughly the same at the onset of the intervention (see Table 2). Besides that, inferential statistics indicated that there was no significant difference between the means of both groups in the pre-test. This entails that the participants used previous summarizing strategies to produce well-written summaries before the training. It also suggests that all participants had the same homogeneity, congruity, and level of reading comprehension. Based on these findings, the first hypothesis is thus confirmed.

Hypothesis 2: There is no significant difference between the control group and the experimental group in the post-test.

In the second hypothesis, it was theorized that the treatment—reciprocal teaching would have no impact on Moroccan EFL college students' ability to gain summarizing skills. Basically, we predicted that the experimental would not outscore the comparison group in the post-test in the sense that participants' performance would be the same; they would produce roughly similar summaries of the articles in terms of quality and decency. The findings obtained from both descriptive and inferential statistics showed that both groups scored differently. Inferential statistics, in particular, revealed that there was a statistically significant difference between the post-test means of the subjects who were trained on the five-macro rules and the comparison group (see Table 5). Simply put, the participants who were taught the five-macro rules produced well-written summaries of the article (s) compared to the comparison group. Hence, the experimental group outperformed the control group showing massive improvement from the pre-test to the pre-test. Given these results, the null hypothesis is, therefore, rejected.

The results of the current study support the original work of Brown and Palincsar (1982) on the differential effect of reciprocal teaching on comprehension fostering skills, including summarizing. In this respect, Moroccan EFL college students who received instruction in reciprocal teaching and were taught the five-macro-rules, such as deletion of trivia, deletion of redundancy, superordination, selection or invention of a topic sentence improved their summarizing skill from pre-test to post-test, compared to the comparison group that received no training. It stands to reason that the instruction of the five-macro rules (see Brown & Day, 1983) and the training in reciprocal teaching intensified the reciprocal subjects' ability to produce well-written summaries. Their performance was reflected in the post-test, wherein their scores drastically increased from the pre-test to the post-test at the end of the training. The students in the control group did not change from the pre-test to the post-test.

The current quasi-experimental study tends to yield interesting implications for teachers and students alike. Evidence suggests that adequate instruction, provision of support, scaffolding, and guided practice, which are at the heart of reciprocal teaching, helped students to master the five-macro rules that would allow them to write decent summaries. In particular, the results indicated that the subjects who were taught the five-macro rules, including deletion of trivia, deletion of redundancy, superordination,

selection, or invention of a topic sentence (Brow & Day, 1983), outperformed the comparison group that received no training. These results corollate with findings and conclusions highlighted by previous research carried out to investigate the same issue (Brown & Palincsar, 1982; Alfassi, 1998; Mandel et al., 2013; El Hamydy & Brigui, 2022; among others).

5. Conclusion

This paper has investigated the differential effect of reciprocal teaching on summarizing among Moroccan EFL college students. It was found that the participants who were trained to use the five-macro rules (brown & Day, 1983) outperformed those in the comparison group in the post-test. These findings were also in line with previous research.

5.1 Pedagogical implications

The findings of this study seem to yield interesting implications for policymakers, instructors, and students in an EFL reading context. Evidence suggests that reciprocal teaching is an effective metacognitive reading strategy, which through adequate training and instruction, can assist learners to self-regulate, monitor and check their reading comprehension. Besides that, reciprocal teaching is a prominent instructional procedure that teachers can implement in the classroom as long as they are willing to adjust it to students' level, ability, and environment. However, teachers are required to provide adequate training and instruction, guided practice, scaffolding, provision of support and encouragement, etc., in order to get fruitful results.

5.2 Limitations

There are basically different limitations associated with the quasi-experimental design, including time constraints, lack of random assignment, and small sample size. Given these limitations, we cannot generalize the findings of the current study, and thus they are open to discussion.

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References

[1] Alfassi, M. (1998). Reading for Meaning: The efficacy of reciprocal teaching in fostering reading comprehension in high school students in remedial reading classes. *American Educational Research Journal, 35,* 309–332.

[2] Bean, T. W., & Steenwyk, F. L. (1984). The Effect of Three Forms of Summarization Instruction on Sixth Graders' Summary Writing and Comprehension. *Journal of Reading Behavior*, *16*(4), 297–306. https://doi.org/10.1080/10862968409547523

[3] Brown, A. L., Campione, J. C., & Day, J. D. (1981). Learning to Learn: On Training Students to Learn from Texts. *Educational Researcher*, *10*(2), 14- 21. https://doi.org/10.3102/0013189X010002014

[4] Brown, A. L., & Day, J., D. (1983). Macro-rules for summarizing texts: the development of expertise. *Journal of Verbal Learning and Verbal Behaviour*, 22(1), 1-14.

[5] Brown, A. L., & Palincsar, A. (1982). Inducing strategic learning from texts by means of informed, self-control training. *Topics in Learning and Learning Disabilities, 2(1),* 1-17.

[6] Cunningham, J. W. (1982). Generating interactions between schemata and text. In J. A. Niles & L. A. Harris (Eds.), *New inquiries in reading research and instruction* (pp. 42-47). Rochester, NY: National Reading Conference.

[7] Cotton, D., Falvey, D., & Kent, S. (2011). *Market leader: Business English course book*. Upper-intermediate (3rd ed.). Pearson Longman.

[8] 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,* 239-264.

[9] El Hamydy, E. M. & Brigui, H. (2022). An Alternative Way of Teaching Reading to High School Students. *Journal of English Language Teaching and Applied Linguistics*, 4 (4), 45-54.

[10] Fry, E. (1977). Fry's readability graph: clarification, validity, and extension to level 17. *Journal of Reading*, 21(3), 242-252.

[11] *Hart, E. R., & Speece, D., L. (1998). Reciprocal teaching goes to college: Effects for post-secondary students at risk for academic failure. Journal of Educational Psychology, 90 (4), 670- 681.*

[12] Kintsch, W., & Van Dijk, T. A. (1978). Toward a model of text comprehension and production. *Psychological review*, *85*(5), 363.

[13] Mandel, E., Osana, H. P., & Venkatesh, V. (2013). Addressing the effects of reciprocal teaching on the receptive and expressive vocabulary of 1st-grade students. *Journal of Research in Childhood Education*, 27, 407-426.

[14] McNeil, J., & Donant, L. (1982). Summarization strategy for improving reading comprehension. *New inquiries in reading research and instruction*, *215*, 219.

[15] Palincsar, A., & Brown, A. (1984). Reciprocal teaching of comprehension-fostering and comprehension monitoring activities. Cognition and Instruction, 1, 117-175.

[16] Spivey, N., R. & Cuthbert, A. (2006). Reciprocal teaching of lecture comprehension skills in college students. *Journal of Scholarship of Teaching and Learning*, 2, 66-83.

[17] Wilcox, R. (2003). *Applying contemporary statistical techniques*. San Diego, CA: Elsevier Science.