THE EFFECT OF MIND MAPPING AND SUMMARIZING ON EFL READING COMPREHENSION ABILITY

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ABSTRACT
The present study aims to investigate the effect of two reading strategies, namely, mind mapping and summarizing on Iranian upper-intermediate learners. To this end, based on the result of pretest, 60 students were randomly assigned to three groups of 20 students. The first experimental group received explicit instruction on mind mapping for ten sessions, the second experimental group received explicit instruction on summarizing for ten sessions, and the third group did not receive any explicit instruction. To test any possible improvement, a posttest was given to all three groups. One-way Anova was done on the pretest results to ensure homogeneity. Further analysis on the results indicated that although the two experimental groups outperformed the control group, the difference between the two treatment groups was not statistically significant. The findings may be useful for language teachers to help students become strategic readers through explicit strategy instruction, reading comprehension, and task accomplishments putting emphasis on learners’ involvement as active participants, and teacher’s roles as a model.

KEYWORDS: Cognitive strategy, Mind mapping, Summarizing, EFL learner

INTRODUCTION
Students’ reading comprehension development has long been investigated for two fundamental reasons: literacy i.e. reading to survive and academic achievement i.e. reading to think. Furthermore, since the twentieth century, migration has increased and expectations form educators have also increased (Grabe, 2009). Anderson (2012) viewed reading as the core language skill for building other language skills: speaking, listening, writing, vocabulary and grammar.

According to O’Malley and Chamot (1999), Foreign or second language learners use various reading strategies while reading. They maintained that the learning strategies can be categorized into three major areas: cognitive, metacognitive, and socio-affective.

The use of language learning strategies was later extended to teaching and learning process of language skills of listening, speaking, reading, and writing. Since 1970s EFL or ESL, researchers have begun to highlight the importance of employing a variety of strategies during reading. The second or foreign language reading researchers have long been fascinated by reading comprehension strategies, among all the different types of learning strategies, and the relationships to more or less successful L2 reading comprehension. O’Mally and Chamot (1999)
have argued that language teachers should go beyond the transmission of knowledge and should empower students to learn skills and strategies needed to become autonomous learners and become capable of taking responsibility for their own learning.

Feyton et al. (cited in Hkezrlou 2012, p: 84) believed that awareness raising of learners’ use of strategies may be relevant to successful learning. However, more studies are needed to indicate how teachers manage explicit strategy instruction in reading comprehension classrooms, how they support learners’ strategy development and how learners are supported through the procedure.

**LITERATURE REVIEW**

Mc Donough (1999) defines learner strategies as steps taken by learners to improve their own learning. Oxford (1990) defines learning strategies as techniques used by learners to facilitate learning and make it more effective, enjoyable, and faster as well as more transferable to new situations. Hence, cognitive strategies are, in fact, mental procedures for accomplishing cognitive goals such as problem solving and test preparation for comprehension.

Oxford (1990) mentioned cognitive strategies are popular ones. The significance of cognitive strategies increases as learners’ age increases in FLL. Therefore, learners should be provided with appropriate strategy instructions. These strategies refer to operations employed in learning and problem solving that need direct analysis, transformation and/or synthesis of learning materials.

Strategies first come from teachers, and then learners develop responsibility for learning and using them. The teacher is initially responsible for a relaxed classroom atmosphere, evaluative feedback and encouragement and if learners are well involved in this process, they will be well conscious and employ these strategies successfully (Nikolov, 1999).

In SLA theory proposed by Wong Fillmore (1991), the teacher is accepted as a model. Therefore, the teacher is responsible for the training to use the resources in the best possible way. Hsiao and Oxford (2002) believed in the teachability of strategies and asserted that strategy training would be more effective if it is done by students through tasks which make the use of strategies necessary.

**Skimming and scanning**

Skimming and scanning are two types of rapid reading techniques. There are steps to follow to achieve the required purposes in each reading technique. In order to skim a text, readers can read the title, the introduction or the lead in a paragraph as well as the first paragraph and the topic sentence of each paragraph. The topic sentence is mainly stated in the first paragraph. However, if the paragraph starts with a question or an anecdote, the last sentence can be more valuable. In addition, one can look for clue words such as proper nouns, unusual words such as italics, boldface, etc. Finally, one can read the last paragraph. Skimming can be achieved at about 1000 words per minute (http://www.aacc.edu/).
Scanning is another reading technique which can be used to read a large amount of a text to locate specific information. In order to scan a reading text, readers need to keep in mind what information they are looking for, anticipate the form of information, e.g. numbers, dates, etc., and analyze the reading organization before reading. Skimming may first be required so that readers can have a clearer idea of which part of text to read. Readers need to move their eyes rapidly over the lines to locate the relevant information according to the purpose they have, and then they can read the entire sentence they spotted (http://www.aacc.edu/).

**Mind mapping**

Buzan (1993) defined mind maps as the cognitive representation and comprehension in the learner. He called it a perfect way to help students to express themselves verbally. In fact, in their mind maps students use representations graphically; this may help them in brainstorming process. Mc Griff (2000) found that relating concepts to images is a creative way which needs thinking rather than memorizing; another study has shown that students who had the chance to express their learning visually had a 40% higher rate of retention compared to verbal learners (Adam & Movers, 2007).

**Summarizing**

Summarizing is reducing a text to the main points for a better understanding. The technique helps students to find out essential ideas and consolidate key information, which enables them to focus on key words and phrases in a text. Summarizing helps comprehension by reducing the length of a text and the following confusion. Teachers train students to break down contents into concise pieces. The technique builds on prior knowledge, improves writing and vocabulary and performance.

A researcher examined the effect of scanning and skimming strategies on Iranian EFL learners' reading comprehension (Khosravi, 2000). The results indicated that scanning strategy significantly improved the students' both reading speed and reading comprehension. However, skimming had only a significant effect on students’ reading comprehension. In still another experimental study, Shokrpour and Fotovatian (2009) attempted to determine the effect of raising awareness on metacognitive strategies on Iranian EFL learners’ reading comprehension. The researcher found that the experimental group showed a significant improvement in reading comprehension compared with the control group.

In addition, summarizing is a strategy through which students comprehend knowledge and transfer it to their long term memory for retention. This leads students to understand the text, distinguish main ideas and express the information using their own words. Susa Kirmizi and Akkaya (2009) maintain that summarizing is a learning strategy that helps students delete minor information to retain a summary of important propositions from texts. (Senemaglu, 2001) believes that summarizing is helpful in comprehending knowledge and transferring it to long term memory mainly because it leads students to read and understand the text, distinguish main ideas and rephrase the information using their own words.
Khoshshima and Rezaeian Tiyar (2014) investigated the effect of Summarizing Strategy on Reading Comprehension of Iranian Intermediate EFL Learners strategies of inference, summarizing and synthesis during and after reading. Although the less skilled readers used inferencing, paraphrasing and repetition strategies, it could be concluded that high proficient readers employed more strategies while comprehending the text.

RESEARCH QUESTION

RQ1. Does mind mapping have any significant effect on Iranian upper-intermediate EFL learners’ reading comprehension performance?

RQ2: Does summarizing have any significant effect on Iranian upper-intermediate EFL learners’ reading comprehension performance?

The following null hypotheses were formulated:

H01= Mind mapping does not have any significant effect on Iranian upper-intermediate EFL learners’ reading comprehension performance.

H02: Summarizing does not have any significant effect on Iranian upper-intermediate EFL learners’ reading comprehension performance.

METHODOLOGY

Participants

The study was conducted in Kish Language School of Science and Technology in Rasht, Iran, in the summer of 2015. The students had just finished studying the last term of upper intermediate (UI4). They had already passed nineteen terms of instruction with the source books “New Headway Series”. They were all female EFL learners whose age ranged from 19 to 35, and were mainly high school and university students. Based on the results of Quick oxford placement test and based on the test direction, 60 of them were randomly assigned into two experimental groups and a control group, each group included 20 participants.

Instruments

The researcher intended to investigate the effect of explicit strategy instruction on students’ reading comprehension performance. To this end, classroom procedures were explained throughout the study which took ten ninety-minute sessions. In addition, students were interviewed on their attitudes towards the treatment period of the strategy instruction. The study was also quantitative in that the results were numerically reported using different statistical analyses. To achieve the purpose of the study, the following materials were employed.

Oxford Placement Test

To make certain that the participants were at an appropriate level, OPT test was utilized. The test was applied to 95 students who were studying English as a Foreign Language at Kish Language School in Rasht in 2015. The test contained three sections: grammar, vocabulary and reading comprehension with a total of 60 scores. Based on the test directions, students whose marks fell
between 37 and 47 were selected and randomly divided into three groups according to the purpose of the study.

**Pretest**
To set up a baseline measurement, a pretest (test one) selected from FCE practice test, University of Cambridge ESOL Examinations, was used.

**Posttest**
To ensure whether there has been any change in participants’ reading comprehension ability, a posttest (test three) from FCE Practice Tests, University of Cambridge ESOL Examinations was used.

**Course book**
Cambridge English Objective First, fourth edition, also known as the First Certificate in English (FCE) was used as a base for practicing reading comprehension strategies during ten sessions. Nine reading lessons were selected and taught according to reading comprehension strategies such as skimming, scanning, mind mapping and summarizing.

**Classroom Procedures**
Classroom procedures were similar in all three classes. Here are two sample lesson plans which were mainly much the same in three classes except that the first experimental group received additional explicit information on mind mapping, the second experimental group received additional explicit instruction on summarizing and the control group didn’t receive any extra explicit information other than scanning and skimming. The sample reading lessons belong to pp. 16, 17, 28 and 29 of FCE course book called *Objective First* as well as the second test of FCE practice test which was chosen for the purpose of teaching strategies: skimming, scanning, mind mapping and summarizing on the first session.

**Session one**

Students’ roles: active participants, discoverers and feedback provider. In mind mapping group, students practiced mind mapping on the second test of FCE practice test. Initially, the strategy was defined according to Buzan (1993) and Friend (2000). Then, the first mind map was made and visually shown on the board by the teacher in the class. This was done after students had made an effort to do the job in pairs. Related comprehension questions were also answered through cooperation. Then, students continued the same procedure. The comprehension questions were answered by the learners and the rest of the mind maps were drawn on the board by mainly volunteers as well as other participants; meanwhile, the teacher monitored, guided, instructed, facilitated and assessed the reading comprehension tasks. In addition, the use of skimming and scanning were elicited, clarified, elaborated and used by the learners.
In summarizing group, summarizing was first elicited, explained and elaborated according to Womly (2005). Then, the second test of FCE practice test as the first experimental group was used; the first paragraph of the first text was summarized and written on the board after students had tried to do it in pairs. Then, related questions were answered and justified in the class. The session continued in a similar way while the teacher mainly monitored, guided, instructed and prompted during pair work, group work and classroom feedback. In addition, skimming and scanning were elicited, explained, elaborated and used by the learners when necessary.

In the control group, skimming and scanning strategies were elicited, clarified and elaborated. Students used the techniques to answer the questions on the first test of FCE practice test as used in the other two groups; they reasoned their answers as a class after they had checked their answers in pairs and groups. The rest of the reading lesson was followed in the same way. The teacher monitored, guided, instructed, assessed and prompted when necessary.

To avoid boredom in all classes, students were often grouped and regrouped. They were responsible to discover answers, check them in pairs and groups. Therefore, cooperation, learner autonomy, learning discovery and learner involvement were very well encouraged.

Session two
Topic: “The Virtual World”     Source Book: Objective First, pp. 16/17

Pre-reading
Aims: Activating background information, arousing interest, encouraging critical thinking, and exposure to new language.

Teacher’s roles: instructor, monitor, input provider, model, instructor, prompter, facilitator and assessor through the whole session.

Students Roles: active participants, discoverers, feedback providers through the whole session.  
Time management: approximately fifteen minutes was spent on prereading activities, forty five minutes on while reading tasks and thirty minutes on post reading tasks.

Task one: “how far do you agree with the following statement? Computer games are anti-social and violent and their uses are mindless nerds” (Group work, 3 minutes, and classroom feedback 3 minutes).
Task two: “what are the advantages of playing computer games on line?” (Group work, 2 minutes; classroom feedback, 2 minutes)

Task three: “think of five most important features of any computer games from the list A-H” (Individual work, 1 minute; checking and discussing in small groups, 2 minutes; classroom feedback 1 minute)

While reading
Aims: Strategy practice such as skimming, scanning, summarizing mind mapping.
Task one: “scan the texts and match them with the following items: a. which game is the cheapest? gets the best review?, seems the most suitable for adults?, has the most impressive soundtrack?” (Individual work, 1 minute; classroom feedback and explanation on how they find the answers and how much of the text were they required to read, 1 minute, feedback 2 minutes).

Task two:
In mind mapping group, students were asked to mind map each text first, and then find the positive and negative points of each game, check their answers with partners and give feedback to the class by drawing their maps on the board and justifying their answers.

In the summarizing class, students were asked to summarize each text into main ideas and supporting details, find the answers and check them with their partners and eventually, give classroom feedback by writing the summary of each paragraph on the board and justifying their answers.

In the control group, students were asked to scan the texts again and find the good points and bad points of each computer game. They were asked to do the activity, check their answers with different partners and finally give classroom feedback and explanation.

The teacher monitored, guided, prompted and assessed students’ learning in all three classes. They all had 15 minutes for task two and 10 minutes for checking their answers in pairs and groups as well as providing the class feedback in 20 minutes.

Post-reading
Aims: vocabulary practice and personalization by producing a similar text.
Task one: “read reviews one to three and find the nouns that go with the verbs a-d, then choose two more collocation for each verb from the box, e.g. a. solve…….. (Review 1) (Individual work, 2 minutes; checking with partners and classroom feedback, 2 minutes)
Task two: “write a review of a computer game, include positive and negative points.” (groups of three, 10 minutes; checking with others in the class, 8 minutes; classroom feedback, 8 minutes)

To avoid boredom and encourage cooperation along with motivation, students were constantly grouped and regrouped.

Procedure
To conduct the study, students who had just finished UI4 from 8 classes were encouraged to participate in a placement test (OPT) to ensure whether they were at the appropriate levels. After having corrected their exam papers, participants whose scores were, based on the test direction, between 37 and 47, were divided into three groups and asked to participate in the study for 10 sessions; each session lasted 90 minutes, in Rasht, Iran, in the summer of 2015.

Firstly, students took part in a pretest to help the researcher make sure of their homogeneity through data analyses. The participants were divided into two experimental groups and a control group. The first experimental group practiced mind mapping as well as skimming and scanning on the first test of FCE practice test for the first session; the second experimental group practiced
summarizing as well as skimming and scanning strategies on the same sample test. Yet, in the third group, the control group, all the attention was given to skimming and scanning strategies and the students practiced them for the first session on the same sample.

All the groups continued practice on the reading lessons of the source book, Objective First. Next, the third test of FCE practice test was given to the three groups as posttest.

RESULTS AND DISCUSSION

1. Examining the Normality Assumption (Pre-test)
Before doing the analysis, the main assumption of One-way ANOVA, i.e. normality of the distributions, was examined through running Leven statistics.

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.780</td>
<td>2</td>
<td>57</td>
<td>.178</td>
</tr>
</tbody>
</table>

The results of Levene statistic showed that the group variances were similar in reading comprehension pre-test (P ≥ .05). The Levene statistic confirmed the hypothesis that the group variances were the same (figure 1).

![Figure 1: Error Bars for Examining the Normality Assumption (pretest)](image)

2. Descriptive Statistics for the Pre-Test Scores (reading comprehension test)
At the beginning of the study, all the participants participated in the pre-test. The purpose was to set up a baseline measurement from which gains on the post-test could be measured and accounted for. Table 2 and 3 show the results of one-way ANOVA used to analyze students’ scores in the pre-reading comprehension test.
The descriptive table displayed the sample size, mean, standard deviation, and standard error for all the three groups at the beginning of the study. For reading comprehension test, the mind mapping, summarizing and control groups' mean scores were \( \bar{X}_{\text{mind mapping group}} = 9.75 \), \( \bar{X}_{\text{summarizing group}} = 9.40 \) and \( \bar{X}_{\text{control group}} = 9.80 \) respectively, and they varied some points around their average. The mean score of the control group was (.05) points higher than that of the mind mapping group and (.40) points higher than summarizing group. Furthermore, the mean score of mind mapping group was (.35) points higher than summarizing group. However, the degree of variation of the scores for the control group \( (SD_{\text{control group}} = 1.67) \) was a little higher than the extent of dispersion of scores around the mean score for the summarizing and mind mapping groups \( (SD_{\text{mind mapping group}} = 1.33; SD_{\text{summarizing group}} = 1.31) \). The following table examines whether these differences in the mean scores of the three groups were statistically significant prior to the introduction of the specific treatment.

Table 3: One-way ANOVA for the Pre-Test Scores of the Control and Experimental Groups

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.900</td>
<td>2</td>
<td>.950</td>
<td>.452</td>
<td>.638</td>
</tr>
<tr>
<td>Within Groups</td>
<td>119.750</td>
<td>57</td>
<td>2.101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>121.650</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 3, there was no significant difference between the mean scores of the three groups in pre-test of reading comprehension \( (p \geq 0.05) \). In other words, the groups were almost at the same level of proficiency in terms of their reading comprehension skill at the beginning of the study before introducing the specific treatment to the experimental groups. The following figure illustrates the three groups’ performance on pre-test of reading comprehension.
Figure 2: the Three Groups’ Performance on Pretest of Reading Comprehension Test

To answer the research questions, One-Way ANOVA procedure produced a one-way analysis of variance for the quantitative dependent variable that was post-reading comprehension performance by the independent variable (types of cognitive strategy). ANOVA was used to test the hypothesis that the means of the three groups were identical on reading comprehension post-test. Since analysis of variance is sensitive to deviation from normality, the equality of the variances for the three groups was examined for the results of the posttest, too. It was assumed that each group was an independent random sample from a normal population. To test this assumption, Levene’s homogeneity of variance test was done on the results of the post-test.

Table 4: Test of Homogeneity of Variances for the Post Test Scores

<table>
<thead>
<tr>
<th></th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>posttest</td>
<td>.485</td>
<td>2</td>
<td>57</td>
<td>.618</td>
</tr>
</tbody>
</table>

Thus, the important first step in the analysis of variance indicated that the variances of the three groups were equivalent for the post-test of reading comprehension (sig=.618 ≥0.05). After confirming the homogeneity of variances, ANOVA was done on the results of the reading comprehension post-test. The descriptive statistics for the reading comprehension posttest is presented in the following table:

Table 5: Descriptive Statistics for the Posttest Scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td></td>
</tr>
<tr>
<td>Mind mapping</td>
<td>20</td>
<td>14.10</td>
<td>1.25</td>
<td>.28</td>
<td>13.51</td>
<td>14.68</td>
<td>11.00</td>
</tr>
<tr>
<td>Summarizing</td>
<td>20</td>
<td>14.40</td>
<td>1.14</td>
<td>.25</td>
<td>13.86</td>
<td>14.93</td>
<td>12.00</td>
</tr>
<tr>
<td>control group</td>
<td>20</td>
<td>10.20</td>
<td>1.36</td>
<td>.30</td>
<td>9.56</td>
<td>10.83</td>
<td>8.00</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>12.90</td>
<td>2.28</td>
<td>.29</td>
<td>12.30</td>
<td>13.49</td>
<td>8.00</td>
</tr>
</tbody>
</table>
Table 6: ANOVA for the Results of the Reading comprehension Test (Post-Test)

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>219.600</td>
<td>2</td>
<td>109.800</td>
<td>69.695</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>89.800</td>
<td>57</td>
<td>1.575</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>309.400</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the post-test showed that the Mean of the *mind mapping group* = 14.10, *summarizing group* Mean = 14.40, *control group* and Mean = 10.20, significantly differed. The significance value of the *F* test in the ANOVA table was less than (.05). Thus, the hypothesis that average assessment scores of the reading comprehension test (post-test) were equal across the three groups was rejected (*F* 2, 57= 69.695, Sig. = .000≤.05).

The following figure illustrates the mean plot for the results of the reading comprehension posttest.

![Figure 3: Mean Plot for the Results of the Reading comprehension (Post Test)](image)

In general, *F* statistics established that there was statistically a significant difference between the three groups' means, and means plots revealed the position of these differences. Participants of the summarizing strategy group outperformed their counterparts, namely, mind mapping group and the control group. After it was shown that the groups differed in some way, post-hoc test revealed more about the structure of the differences. Before performing the analysis of variance, the means and standard errors were graphed.

![Figure 4: Error Bars for the Results of the Reading Comprehension Test (posttest)](image)
Table 7: Multiple Comparisons for the Results of the Posttest

<table>
<thead>
<tr>
<th>(I) groups</th>
<th>(J) groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>mind mapping</td>
<td>Summarizing</td>
<td>-.30000</td>
<td>.39692</td>
<td>.753</td>
<td>-1.2977 to .6977</td>
</tr>
<tr>
<td></td>
<td>control group</td>
<td>3.90000*</td>
<td>.39692</td>
<td>.000</td>
<td>2.9023 to 4.8977</td>
</tr>
<tr>
<td>Summarizing</td>
<td>mind mapping</td>
<td>.30000</td>
<td>.39692</td>
<td>.753</td>
<td>-.6977 to 1.2977</td>
</tr>
<tr>
<td></td>
<td>control group</td>
<td>4.20000*</td>
<td>.39692</td>
<td>.000</td>
<td>3.2023 to 5.1977</td>
</tr>
<tr>
<td>control group</td>
<td>mind mapping</td>
<td>-3.90000*</td>
<td>.39692</td>
<td>.000</td>
<td>-4.8977 to -2.9023</td>
</tr>
<tr>
<td></td>
<td>Summarizing</td>
<td>-4.20000*</td>
<td>.39692</td>
<td>.000</td>
<td>-5.1977 to -3.2023</td>
</tr>
</tbody>
</table>

\* The mean difference is significant at the 0.05 level.

The highest mean difference was found between “summarizing group” and “control group” with mean difference of (4.20). On the other hand, the lowest mean difference was reported for “summarizing group” and “mind mapping group” (mean difference= .30).

As shown in Table 7, “summarizing group” outweighed the other two groups in terms of their reading comprehension performance (mean summarizing group =14.40; SD = 1.14).

In the second place, “mind mapping group” performed better than “control group” (mean mind mapping group =14.10; SD = 1.25). Finally, the “control group’s” performance was lower than that of the other two groups (mean control group = 10.20; SD = 1.36). The following figure illustrates the performance of the three groups in posttest.

Figure 5: The Groups’ Performances on Reading comprehension Test (Post-Test)

In order to investigate the students’ possible gradual development within groups, three paired t-tests were also run, which showed the subjects’ progress in pre-test and post-test shown in Tables 8.
Table 8: Statistics for the Pre and Post Test Scores of Reading comprehension Test

<table>
<thead>
<tr>
<th></th>
<th>Posttest (mind mapping group)</th>
<th>Pretest (mind mapping group)</th>
<th>Posttest (summarizing group)</th>
<th>Pretest (summarizing group)</th>
<th>Posttest (control group)</th>
<th>Pretest (control group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>14.10</td>
<td>9.75</td>
<td>14.40</td>
<td>9.40</td>
<td>10.20</td>
<td>9.80</td>
</tr>
<tr>
<td>Median</td>
<td>14.50</td>
<td>9.00</td>
<td>14.50</td>
<td>9.50</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Mode</td>
<td>15.00</td>
<td>9.00</td>
<td>15.00</td>
<td>10.00</td>
<td>10.00a</td>
<td>11.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variance</td>
<td>1.56</td>
<td>1.77</td>
<td>1.30</td>
<td>1.72</td>
<td>1.85</td>
<td>2.80</td>
</tr>
<tr>
<td>Skewness</td>
<td>-.922</td>
<td>.954</td>
<td>.038</td>
<td>.087</td>
<td>-.262</td>
<td>-.324</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.512</td>
<td>.512</td>
<td>.512</td>
<td>.512</td>
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</tr>
<tr>
<td>Kurtosis</td>
<td>.472</td>
<td>.327</td>
<td>.622</td>
<td>.500</td>
<td>-1.002</td>
<td>-1.250</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.992</td>
<td>.992</td>
<td>.992</td>
<td>.992</td>
<td>.992</td>
<td>.992</td>
</tr>
<tr>
<td>Range</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>4.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Minimum</td>
<td>11.00</td>
<td>8.00</td>
<td>12.00</td>
<td>7.00</td>
<td>8.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>16.00</td>
<td>13.00</td>
<td>17.00</td>
<td>12.00</td>
<td>12.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Sum</td>
<td>282.00</td>
<td>195.00</td>
<td>288.00</td>
<td>188.00</td>
<td>204.00</td>
<td>196.00</td>
</tr>
</tbody>
</table>

a. Multiple modes exist. The smallest value is shown.

The mean scores of “mind mapping group” improved from (M= 9.75) in pre-test to (M= 14.10) in post-test. For the “summarizing group” it changed from (M= 9.40) in pre-test to (M= 14.40) in posttest, and finally, the mean of the “control group” changed from (M= 9.80) in pre-test to (M= 10.20) in post-test on the reading comprehension test.

CONCLUSION AND IMPLICATIONS

The main purpose of the current study was to figure out the effect of two reading techniques including the summarizing and mind mapping on upper-intermediate EFL learners’ reading comprehension. The findings indicated that the current study put emphasis on the importance of these two techniques in language classrooms. Furthermore, current study advocated the importance of students’ strategy learning. In fact, as (Novak, 2010) argues, “the central purpose of education is to empower learners to take charge of their own meaning making (p. 21)” and learning strategies such as mind mapping and summarizing are strong tools to serve such requirements.

It is important that learners know how to learn. Thus, new theories need to be devised for language learning to help us understand the nature of learning and learning to learn better. This is possible by more investigation in the related strategy areas.

The current study tried to put emphasis on the crucial role of the learners by their strong involvement as focused by many authorities such as (McDonough & Oxford, 1999). In addition, the research highlighted the role of the teachers as a model and task manager as recommended by
other authorities such as Filmore and Nicolov (1991) and Feyton., et al. cited in Khezlou (2012).

The pedagogical implications are as follows:

First, there is growing evidence that strategy instruction can be fruitful and valuable to many students. Language teachers can implement strategy instruction into their lesson plans. It is suggested that language learning textbooks be strategy-based.

Second, it is not enough to ask the teachers to conduct strategy teaching in their classrooms. Teachers need to help and raise awareness in the area. Teachers’ training courses, accessing published material about strategy instruction, and keeping in contact with strategy specialists can be useful.

Finally, it is very important to adjust the instruction to the learners’ needs. Teachers need to know, first, about the current preferences of strategies among their students. If this is carried out efficiently, the selection of which strategies to work on could be facilitated based on the needs of the students.

Limitations of the Study
This study has a number of restrictions which are presented as follows:
1-This study was conducted among the upper-intermediate learners. Any conclusion drawn is based on this population and caution should be exercised to make any further generalization.
2- Time and amount of practice can be used more effectively. As for mind mapping and summarizing techniques, the teacher can encourage the students by providing them with other reading passages to practice and practice in and out of the classroom.
3- This study was carried out during ten sessions in a language institute. Due to time limitations, the research needs to be conducted in a longer period of time and to include even longitudinal studies to shed light on how the techniques can help language learners in their reading skill.

Recommendations for Further Research
Reading has always been explained and defined as one of the most useful skills to learn a language. Research is abundant in this skill and many researchers examined different strategies and techniques to improve this ability among the language learners. More specifically, summarizing and mind mapping beside skimming and scanning are the techniques which can be beneficial to enhance reading skill. In light of the present study, certain pedagogical implications can be proposed. First, EFL instructors should integrate semantic mapping and summarizing strategy instruction to their EFL/ESL classes in order to improve comprehension and enhance reading speed. Based on the results of the present study, the following suggestions can be proposed:

1-Instruction on different types of mind mapping and summarizing should be operationalized and implemented by second language instructors. As Macalister (2010) suggests, it is likely that a reading course, of itself, may not be sufficient to enhance and maintain reading speed. Thus, the challenge for teachers is to decide how best to reinforce the reading gains through techniques like summarizing and mind mapping.
2-Second, the techniques of mind mapping and summarizing can be used in textbooks and language learning materials in the form of reading practices and exercises. It is suggested that material designers and English book compilers apply such techniques.

3-Third, since the result of the present study showed a statistically significant effect of the two reading techniques, it is proposed that more research be conducted on other language skills and areas like writing or listening comprehension to find out the potential effects of these techniques.

4-Finally, other techniques can be implemented and experimented in order to find out how they can affect language skills like reading and they can be compared against each other. This helps both researchers and language teachers to gain insight which can be more beneficial for language learners.

REFERENCES


Macalister, J. (2010). Speed reading courses and their effect on reading authentic texts: A preliminary investigation. ISSN 1539-0578


