AMERICAN UNIVERSITY OF BEIRUT

EFFECT OF TOPIC FAMILIARITY ON LITERAL AND HIGHER-ORDER READING COMPREHENSION

by
YOUSSRA SAMI KFOURY

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts to the Department of Education of the Faculty of Arts and Sciences at the American University of Beirut

Beirut, Lebanon
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by

YOUSSRA SAMI KFOURY

Approved by:

Dr. Ghazi Ghaith, Professor
Education
Advisor

Dr. Saouma BouJaoude, Professor
Education
Member of Committee

Dr. Fahmi Banafa, Assistant Professor
Education
Member of Committee

Date of thesis defense: June 11, 2007
AMERICAN UNIVERSITY OF BEIRUT

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I would like to dedicate this thesis to my sisters Youmna and May, my brother Mousa, and my husband Youssef who stood by me and supported me until I completed this work.
Title: Effect of Topic Familiarity on Literal and Higher-Order Reading Comprehension

Activating background knowledge is known to play an important role in reading comprehension. Many researchers around the world have investigated this topic. Most of the studies, however, were conducted in monolingual intermediate and secondary school settings; few of them were conducted in bilingual contexts. In this study, the researcher investigated the effect of topic familiarity and background knowledge on bilingual Lebanese fourth grade students’ literal as well as higher order comprehension. A basic premise behind the study is that background knowledge is necessary to higher order thinking that involves interpretive, critical and evaluative reading (Pressley, 2001).

The study employed a pretest-posttest control group experimental design. The subjects are bilingual Lebanese fourth graders (n=44) learning English as a foreign language (EFL) at a private school in Mount Lebanon. The subjects were assigned to control and experimental conditions. The experimental group received direct instruction in building relevant background knowledge; whereas, the control group followed the procedures of lesson planning of their textbooks. Results indicated that there was statistically significant difference on the dependent variable of the literal comprehension when reading nonfiction texts in favor of the experimental group, and on the dependent variable of the higher order comprehension when reading fiction texts in favor of the control group.
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Chapter I

Introduction

Over the past few decades, considerable research has investigated the effect of topic familiarity and background knowledge on reading comprehension. (e.g., Bensoussan, 1989; Brantmeier, 2003; Hudson, 1982; Rowe & Rayford, 1987). The results of these studies are generally inconclusive and contradictory. For instance, Brantmeier (2003) reported that topic familiarity is an important factor in reading comprehension. Conversely, Hudson (1982) reported that there appear to be differences in the abilities to form schemata from printed input across levels of proficiency. Furthermore, advanced level students have less trouble processing visual information and altering schemata than lower level students and are able to bring more nonvisual information to bear on the reading process than the beginning or intermediate level students.

However, most of the preceding research on the role of topic familiarity and background knowledge in reading comprehension was conducted in monolingual intermediate and secondary school settings (Bensoussan, 1989; Brantmeier, 2003; and Hudson, 1982). Few researchers have investigated the effect of readers’ background knowledge in bilingual elementary contexts where readers have to comprehend material that reflects the thought patterns and content of a culture other than their own. Only Rowe and Rayford (1987) investigated the effect of background knowledge on reading comprehension on elementary students.

Consequently, there is a need to conduct further research on the effect of background knowledge on the literal and higher order comprehension of elementary students.
The purpose of this research is to investigate the effect of activating background knowledge on bilingual Lebanese fourth grade students’ literal as well as higher order comprehension. A basic premise behind the study is that background knowledge is necessary to higher order thinking that involves interpretive, critical, and evaluative reading (Pressley, 2001).

Activating background knowledge is the independent variable in this experimental study. Three prereading activities were given to students in the experimental group, the prereading questions, keywords with their definitions, and pictures. Literal and higher order reading comprehension skills (dependent variables) were measured by posing different types of questions in the reading comprehension tests that will be given to students during the posttest stage.

More specifically, the present study addressed the following questions:

1. Does activating background knowledge affect the literal reading comprehension of 4th grade students when reading fiction texts?

2. Does activating background knowledge affect the higher order reading comprehension of 4th grade students when reading fiction texts?

3. Does activating background knowledge affect the literal reading comprehension of 4th grade students when reading nonfiction texts?

4. Does activating background knowledge affect the higher order reading comprehension of 4th grade students when reading nonfiction texts?

**Hypotheses**

1. There will be no statistically significant difference on the dependent variable of the literal comprehension of grade 4 students in the control and experimental group when reading fiction texts.
2. There will be no statistically significant difference on the dependent variable of the higher order comprehension of grade 4 students in the control and experimental group when reading fiction texts.

3. There will be no statistically significant difference on the dependent variable of the literal comprehension of grade 4 students in the control and experimental group when reading nonfiction texts.

4. There will be no statistically significant difference on the dependent variable of the higher order comprehension of grade 4 students in the control and experimental group when reading nonfiction texts.

Variables

Independent variable (Activating background knowledge): This variable is operationally defined through three prereading activities, prereading questions, vocabulary definitions, and pictures.

Dependent variables (Literal and higher order comprehension): “To take in ideas that are directly stated is literal comprehension”. “Higher order comprehension includes interpretive, critical, and creative comprehension. To read between the lines is interpretive reading; to read for evaluation is critical reading; and to read beyond the lines is creative reading.” (Hadley, 2001, p.214). Students will be given the chance to read fiction and nonfiction texts, and answer various types of questions that measure their literal and higher order comprehension. See Appendices (I, II, III, IV, and V) on p.22-40.
Chapter II

A Review of Related Literature

Schema Theory

Bartlett (1932) (as cited in Hadley, 2001) introduced the term “schema” in his book *Remembering: A Study in Experimental and Social Psychology*. This theorist maintained that one of the basic tenets of the schema theory is that any given text does not carry meaning in and of itself. Rather, it provides direction for listeners or readers so that they can construct meaning from their own cognitive structure (previously acquired or background knowledge). Rumelhart (1980) (as cited in Hadley, 2001) has also defined the term “schema” as an abstract representation of a generic concept for an object, event, or situation. According to Rumelhart, students misunderstand a text when they find the wrong schema for a given concept or event. On the other hand, Hudson (1982), Anderson, Prichert, Goetz, Schallert, Stevens, Trollip (1976), and Rumelhart (1980) (as cited in Hadley, 2001) explained that comprehension is not a matter of simply processing the words of the message, but involves fitting the meaning of the message to the schema that one has in mind.

Reading theorists have proposed an interactive model of comprehension. For example, Rumelhart (1980) (as cited in Hadley, 2001) described the bottom-up processing and the top-down processing. The theorists believed that bottom-up processing and top-down processing occur at the same time. Carrell (1988) (as cited in Hadley, 2001) found that skilled readers shift from one processing mode to the other, while lower-proficiency readers rely too much on one mode of processing, resulting in problems in comprehension. Carrell and Eisterhold (1983) (as cited in Hadley, 2001) explained that there are two basic kinds of schemata used in understanding messages:
(a) content schemata relating to one’s background knowledge and expectations about objects, events and situations, and (b) formal schemata relating to one’s background knowledge of different types of texts.

In the 1960s, the role of meaningfulness and organization of background knowledge was emphasized by cognitive psychologists such as Ausubel (1968, 1978) (as cited in Hadley, 2001) who believed that learning must be meaningful to be effective and permanent. For material to be meaningful, it must be relatable to existing knowledge that the learner already possesses. Ausubel stressed that the teachers must use pedagogical devices, such as advance organizers, that help readers activate relevant background knowledge, and therefore, facilitate the learning of new material. “Many researchers and practitioners have used the term “advance organizer” in recent years to refer to an array of pedagogical aids, including pictures, titles, topic summaries, preposed questions, and the like.” (Hadley, 2001, p.153). The questions now are: Can pictures, drawings, or other visual organizers actually enhance students’ comprehension of texts in the second language? Which of these organizers is the most effective device? What is the effect of prereading activities on comprehension of target-language materials? Does going over key vocabulary with students prior reading a passage enhance their comprehension of the text? What is the effect of giving the students a brief outline, summary, or title of the passage on comprehension? How useful are prequestioning techniques in facilitating comprehension?

The Role of Visual Organizers in Comprehension

There have been a large number of experiments on the use of advance organizers and their effect on comprehension. Most of the studies conducted on this topic, were conducted with college students. A number of studies, that looked at reading
comprehension in a foreign language, have shown that visual materials like pictures, video, or graphic organizers, generally enhance comprehension of a target-language text, particularly when learners are at a low level of proficiency. A number of these studies investigated the effects of providing subjects with a title or topic for a passage before reading. It was found that those receiving the topic/title before reading the passage rated it more comprehensible and had significantly better recall than topic-after or no-topic condition. In addition to investigating the effects of giving a topic or title to activate background knowledge, second-language researchers have investigated the effects of summaries of the main ideas of a passage, prequestioning techniques, and the use of captions with videotaped materials. The results of these studies indicate that both declarative and interrogative forms of advance organizers that summarize the main events of a video can enhance comprehension, and that using a set of questions in advance of viewing can enhance comprehension as well (Herron et al. 1999 as cited in Hadley, 2001).

Though many studies have shown that various kinds of advance organizers are effective, not all studies demonstrate a comprehension advantage when an advance organizer is used. For example, a study conducted by Carrell and Wise (1998) (as cited in Hadley, 2001) suggests that although prior knowledge has often been shown to affect reading comprehension in both L1 (first language) and L2 (second language), it does not always do so. They suggest that readers do not always activate their knowledge, and that the significance of factors such as prior knowledge and interest in the topic can differ with different populations and different proficiency levels. The relevant question now is: Are the findings with older students applicable at the elementary level?
Research Studies

Rowe and Rayford (1987) in their article *Activating Background Knowledge in Reading Comprehension Assessment* have reported a descriptive study that investigated readers’ activation of background knowledge (independent variable) in response to prepassage purpose questions selected from the reading comprehension section of the research edition of the Metropolitan Achievement Tests (MAT) (1985), and it has an effect on reading comprehension (dependent variable). The purpose of their study was to show the importance of prepassage purpose questions in activating the students’ background knowledge or schema. In addition, topic familiarity, the amount of information presented, and the presence of genre clues were suggested as text features affecting schema activation. A total of 74 students from grades 1, 6 and 10 were shown three purpose questions from appropriate levels of the MAT and asked to make predictions about the content of related passages. Interviews were conducted, transcribed, and analyzed to investigate the relationship of the responses of the content of the purpose questions and for the content of schema elaboration. Prescott, Balow, Hogan, and Farr (1985) (as cited in Rowe and Rayford, 1987), the authors of the MAT6, suggest that their reasons for including purpose questions are two-fold. First, purpose questions help prospective readers can use to organize their thinking in relation to passage content. Second, purpose questions may serve a motivational function; building interest in the passage and helping test-takers form personal reasons for reading, over and above the obvious purpose of “scoring well”. The results of this study indicate that a broad age range of students can use purpose questions as cues to activate background knowledge, and thus generally support their value as prepassage content cues. However, a second finding of this study is that purpose questions may differ in their value as cues,
depending on how they are written. In the end, the researchers suggest that reader factors such as familiarity with the topics introduced, and text factors such as the amount of information provided need further investigation.

Bensoussan (1998) in her article *Schema Effects in EFL Reading Comprehension* has reported about an experimental study that examined the effects of faulty schemata (independent variable) on reading comprehension (dependent variable). Bensoussan stated that comprehension is seen as the interaction between top-down processing from activated schemata and bottom-up processing from concepts expressed by the text. If the readers activate an inappropriate schema, they may miss the meaning of the text. At the end of an advanced English reading course at Haifa University, a test of reading comprehension was administered to 125 multilingual and multicultural students, including native speakers of Hebrew, Arabic, Russian, Amharic, and other languages. One section of the test contained an advanced level text about love and marriage, a text close to the personal experience of the examinees. The second section of the test contained two texts, which had already been studied in the course. Using dictionaries, students translated expressions and sentences and answered short-answer comprehension questions in English. The purpose of the study was to examine the relative importance of schemata-driven and non-schemata-driven factors in reading comprehension. Bensoussan gave seven reasons for students to activate inappropriate schemata; one of them is related to the unfamiliarity and the abstractness of the topic. In this case, readers may not have adequate schemata to relate to the text. In an assessment situation, where language proficiency and reading comprehension are being tested, a completely unfamiliar topic or texts on a highly abstract level should be avoided because these place the student at an unfair disadvantage and may cause unnecessary
anxiety. This point agrees with the schema theory that was first developed by Bartlett (1932).

Results of the study showed that the use of wrong schemata or prior knowledge was probably a significant factor influencing test scores. Since no relation was found between wrong use of schemata and difficulty of text questions, it may be assumed that the difficulty is found in the text itself. The comparatively higher scores on the text on love could indicate significant students’ interest, lack of motivation in reading the class texts, difficulty with the abstractness of the old texts, or a combination of all three. A conclusion that may be drawn from this study is that students’ attitudes toward text content may be a powerful factor in determining test scores, perhaps as important as the factor of language proficiency because when students are interested in what they are reading, they will try their best to use their knowledge about the topic and make connections between what they read and their daily experiences in life. This conclusion lead to better test results.

Brantmeier (2003) in his article *Linguistic Knowledge: Individual Differences in Second language Reading* has focused on the idea that reading in a second language (L2) is a dynamic process that involves the interplay of complex factors. Brantmeier (2003) has conducted an experimental study that investigated the effects of readers’ gender, topic familiarity, enjoyment, and interest (independent variables) on second language reading (dependent variable). Participants were 86 intermediate Spanish students at the university level. First, students had to read two passages that were selected from intermediate-level literary texts. After the students read the passages, three written recalls were used to assess comprehension. The instructions on the recall sheet indicated that the learner should try to recall main ideas as well as details.
Students were instructed not to look at the passage while completing the recall task. Participants also completed the questionnaire that included items on sex, age, major, native language, number of years of Spanish study in high school and university, and whether or not, where and how long participants had lived in a Spanish-speaking country. Topic familiarity, enjoyment and interest levels were assessed via multiple-choice questions (on a 5-point Likert Scale) that allowed respondents to show discrimination in their judgments. The results of this study demonstrated that there were significant individual differences by gender within what may be deemed a homogeneous population of L2 readers. Language skills may not be the only limiting factor in L2 reading comprehension. Recent research has shown that text topics do interact with gender differences in L2 reading comprehension scores. Passage content may increase the L2 reader’s burden at the intermediate level of instruction. A higher level of topic familiarity with a particular topic may lead to greater recall from a text. Conversely, a lower level of topic familiarity may lead to lower recall of the text. The results support the idea that topic familiarity is an important factor in reading comprehension.

Thom Hudson (1982) in his article *The Effects of Induced Schemata on the “Short Circuit” in L2 Reading: Non-Decoding Factors in L2 Reading Performance* has reported about an experimental study, in which he examined the role played by schemata in L2 reading by adult ESL students who are proficient readers in their native language. Three methods of intervention which allowed three types of schemata reconciliation were used. The three methods are termed Pre-reading (PRE), Vocabulary (VOC), and Read-Test/ Read-Test (RT). In the PRE condition, subjects were given a set of cue pictures and instructed to briefly look through it. They were then asked a number of focus questions, which accompanied each set of cue pictures. During the last two
minutes of the cue picture discussion, subjects were asked to write their predictions of what they expected to find in the reading passage. Subjects then read the passage, and were given a comprehension test for ten minutes. In the VOC condition, subjects were given a list of vocabulary items which would appear in the reading passage. Following the vocabulary list presentation, students were given enough time to predict what the passage was about, and then had the comprehension test directly. In the RT condition, subjects were given the reading passage and instructed to read silently for fifteen minutes. The reading selection was then collected and the comprehension test was distributed. The test was collected again, and the subjects received the identical reading passage. They were allowed ten minutes for this reading. At the end of this time, passages were collected and a comprehension test identical to the first was distributed. Subjects were allowed five minutes for this test.

A 3x3 analysis of variance with one trial factor (3 levels), types of treatment, and two grouping factors, order and level, was used to determine overall effect on scores due to type of treatment or sequence of treatments. Scores were further analyzed to test for interaction of level and treatment. Subsequently, a comparison for differences among means in the comprehension scores for the three treatments was carried out on the scores for level, treatment, and treatment order. The results of the study indicate that the VOC and RT treatments were less effective than the PRE treatment at the beginning and intermediate levels and that they were as or more effective at the advanced level. Thus, there appear to be differences in the abilities to form schemata from printed input between levels of proficiency. Advanced level students have less trouble processing visual information and altering schemata than lower level students and are able to bring
more nonvisual information to bear on the reading process than the beginning or intermediate level students.
Chapter III

Methodology

Study Design

The present study employed a pretest-posttest control group experimental design and conducted with fourth graders in order to investigate the effect of activating background knowledge on literal and higher order reading comprehension. The population in this study is Broummana High School (BHS) fourth graders. BHS is located in Mount Lebanon. It is a private non-profit institution, established in 1873, licensed and accredited by the Lebanese Ministry of Education to be a coeducational boarding and day school for students in the classes of the nursery, infant, primary, intermediate, and secondary schools.

Subjects in this study are grade 4 students (n = 44) distributed to A and B sections. They were assigned to control and experimental conditions. Intact classes were randomly assigned into experimental and control conditions. The random assignment indicated that section (A) is the control group (n= 22), and section (B) is the experimental group (n=22). The subjects are bilingual students learning English as a foreign language (EFL).

EFL (English as a foreign language) indicates the use of English in a non-English-speaking region. ESL (English as a second language) indicates the use of English within an English-speaking region.

A detailed lesson plan was developed and used by the teachers in order to ensure treatment fidelity and control for teacher effect. Observation of classes was held to ensure that the treatment was conducted as planned.
**Procedures**

Students in the experimental and the control groups were given two reading comprehension tests that match with their level; the tests measured their literal and higher order comprehension of fiction and nonfiction texts. In the first treatment, students in the experimental group were given a number of prereading questions to answer prior reading a fiction text. The purpose behind pausing these questions prior reading the text is to activate the students’ background knowledge and help them relate their own experiences in life to what they read and reflect on that in their answers to different types of questions paused in the text. Students in this group were given this treatment again, but this time they read a nonfiction text.

In the second treatment, students were given a set of vocabulary words with their definitions. The keywords were taken from the text that they read afterwards. Therefore, students had the chance to be exposed to difficult and new words’ definitions prior to reading the text. Later, students were given the fiction text to read and answer a set of questions. Students in this group were given this treatment again, but this time they read a nonfiction text.

In the third treatment, students were given a number of pictures related to the text prior to reading it. The purpose behind this treatment is to use the pictures in activating the students’ background knowledge about the topic, and help them visualize what they read, and create images in their minds about it. Later, students were given the chance to read the fiction text and answer various types of questions. Students in this group were given this treatment again, but this time they read a nonfiction text.
The intervention lasted for one month, and the students in the control group were not given any of these three treatments. Instead, they were taught a new spelling lesson for 15 minutes before taking the reading comprehension test.

In the posttest stage, students in both groups were given two reading comprehension tests. The students in the experimental group were given the tests with the three prereading activities they were exposed to during the three treatment stages. On the other hand, students in the control group were given the same tests without the prereading activities.

*Data Analysis*

Descriptive statistics (Means and Standard Deviations) of the scores were computed for the pretest and posttest across the two types of comprehension (literal and higher order). Two MANCOVA tests were conducted to address the questions raised in the study. The experimental conditions (experimental vs. control) were used as independent variable, literal and higher order comprehension when reading fiction and nonfiction selections as dependent variables. The school reading comprehension scores were used as covariates to adjust for any possible preexisting differences.
Chapter IV

Results

Descriptive Statistics

The mean scores and standard deviations of the posttest scores of the control and experimental groups reading fiction and nonfiction texts are shown in Table 1.

Table 1.

Descriptive Statistics (Means and Standard Deviations) For The Control and The Experimental Groups on the Dependent Variables.

<table>
<thead>
<tr>
<th>Type of Text</th>
<th>Control Pre</th>
<th>Post</th>
<th>Experimental Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiction Literal</td>
<td>8.860 0.670</td>
<td>6.700 0.620</td>
<td>8.000 0.660</td>
<td>6.330 0.570</td>
</tr>
<tr>
<td>Fiction High</td>
<td>3.520 0.330</td>
<td>6.140 0.440</td>
<td>4.170 0.360</td>
<td>5.140 0.430</td>
</tr>
<tr>
<td>Nonfiction Literal</td>
<td>10.900 0.468</td>
<td>11.900 0.780</td>
<td>10.100 0.516</td>
<td>13.100 0.502</td>
</tr>
<tr>
<td>Nonfiction High</td>
<td>5.140 0.278</td>
<td>4.480 0.281</td>
<td>5.570 0.321</td>
<td>4.810 0.245</td>
</tr>
</tbody>
</table>
Table 2.

**ANCOVA Test on The Dependent Variable of Literal Comprehension When Reading Nonfiction Texts.**

<table>
<thead>
<tr>
<th>Source</th>
<th>Hypothesis</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>14.639</td>
<td>1</td>
<td>14.639</td>
<td>2.314</td>
<td>.154</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td>76.980</td>
<td>12.170</td>
<td>6.325</td>
<td></td>
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<tr>
<td>Prelitnonf</td>
<td>Hypothesis</td>
<td>171.038</td>
<td>1</td>
<td>171.038</td>
<td>35.001</td>
<td>.000</td>
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<tr>
<td>Error</td>
<td></td>
<td>190.581</td>
<td>39</td>
<td>4.887</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>Hypothesis</td>
<td>37.928</td>
<td>1</td>
<td>37.928</td>
<td>7.761</td>
<td>.008</td>
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<tr>
<td>Error</td>
<td></td>
<td>190.581</td>
<td>39</td>
<td>4.887</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.

**ANCOVA Test on The Dependent Variable of Higher Order Comprehension When Reading Fiction Texts.**

<table>
<thead>
<tr>
<th>Source</th>
<th>Hypothesis</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>118.062</td>
<td>1</td>
<td>118.062</td>
<td>21.508</td>
<td>.004</td>
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<tr>
<td>Error</td>
<td></td>
<td>32.295</td>
<td>5.883</td>
<td>5.489</td>
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<tr>
<td>Prelitnonf</td>
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<td>10.333</td>
<td>2.672</td>
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<tr>
<td>Error</td>
<td></td>
<td>150.809</td>
<td>39</td>
<td>3.867</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>Hypothesis</td>
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<td>14.708</td>
<td>3.803</td>
<td>.058</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td>150.809</td>
<td>39</td>
<td>3.867</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.

**ANCOVA Test on The Dependent Variable of Literal Comprehension When Reading Fiction Texts.**

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
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Table 5.

**ANCOVA Test on The Dependent Variable of Higher Order Comprehension When Reading Nonfiction Texts.**

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<th>F</th>
<th>Sig.</th>
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<td>1.443</td>
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</table>
Table 6.

Pre-literature fiction & Post-literature fiction

There was no statistically significant difference between the experimental and the control group reading fiction texts on the literal comprehension scores $F (1,39) = .001$, $P = .978$
Table 7.

*Pre-higher fiction & Post-higher fiction*

There was a statistically significant difference between the experimental and the control group reading fiction texts on the higher order comprehension scores $F (1,39) = 3.803, P = .058$ in favor of the control group.
Table 8.

*Pre-higher nonfiction & Post-higher nonfiction*

There was no statistically significant difference between the experimental and the control group reading nonfiction texts on the higher order comprehension scores $F(1,39) = .48$, $P= .48$
Table 9.

*Pre-literal nonfiction & Post-literal nonfiction*

There was a statistically significant difference between the experimental and the control group reading nonfiction texts on the literal comprehension scores $F(1,39) = 7.76$, $P = .00$ in favor of the experimental group.
MANCOVA Analysis

First, there was no statistically significant difference between the experimental and the control group reading fiction texts on the literal comprehension scores $F(1,39) = .001, P = .978$. On the other hand, there was a statistically significant difference between the experimental and the control group reading fiction texts on the higher order comprehension scores $F(1,39) = 3.803, P = .058$ in favor of the control group. Second, there was no statistically significant difference between the experimental and the control group reading nonfiction texts on the higher order comprehension scores $F(1,39) = .48, P = .48$. On the other hand, there was a statistically significant difference between the experimental and the control group reading nonfiction texts on the literal comprehension scores $F(1,39) = 7.76, P = .00$ in favor of the experimental group.
Chapter V

Discussion

The study addressed the questions of whether activating background knowledge affect the literal and the higher order comprehension of EFL elementary students (fourth graders when reading fiction and nonfiction texts. The results revealed a statistically significant difference in favor of the control group on the dependent variable of higher order comprehension when reading fiction texts, and in favor of the experimental group on the dependent variable of literal comprehension when reading nonfiction texts. On the other hand, the results revealed no statistically significant differences between the experimental and the control group on the dependent variable of literal comprehension when reading fiction texts, and of the higher order comprehension when reading nonfiction texts.

When we compare the results of this study to the results of previous studies conducted on the effect of topic familiarity and background knowledge on reading comprehension (e.g., Bensoussan, 1989; Brantmeier, 2003; Hudson, 1982; Rowe & Rayford, 1987), we find out that activating background knowledge is an important variable and it affects reading comprehension scores positively in few cases. In Rowe and Rayford (1987) the results indicate that a broad age range of students can use purpose questions as cues to activate background knowledge, that means prereading activities such as the purpose questions they were introduced to before reading the texts, helped them organize their thoughts about the passage content. This finding agrees with the finding of this study that revealed statistically significant differences in favor of the experimental group on the dependent variable of literal comprehension when reading nonfiction texts. In (Brantmeier, 2003) the results showed that a higher level of topic
familiarity with a particular topic may lead to greater recall from a text. This finding also agrees with the significant finding in this study, which supports the idea that topic familiarity and activating background knowledge are important factors in reading comprehension. In (Hudson, 1982), the treatment was very much close to the treatment used in this study. Activating background knowledge through posing prereading questions before reading the text and providing students with a list of vocabulary items, which would appear in the reading passage, allowed the adult students to form schemata from printed input more than lower level students, intermediate and beginning. This suggests that results are in favor of the experimental group when the subjects are in advanced levels only. Although this finding disagrees with the significant finding in this study, it agrees with the other findings that indicate no statistically significant differences between the control and the experimental groups on the dependent variable of literal comprehension when reading fiction texts, and on the dependent variable of higher order comprehension when reading nonfiction texts.

In the end, the researchers’ observations concluded that the text factors, the students’ language proficiency, and the focus on activating background knowledge in this study might have made the fourth grade students misinterpret the questions posed in the tests due to the students’ concentration on the information given to them in the treatment stage prior to reading the fiction and the nonfiction texts, and might have also made the results of the higher order comprehension variable insignificant. Therefore, text factors and the students’ language proficiency level deserve further investigation.

The pedagogical implications of these findings call for activating background knowledge since the results affected the dependent variable of literal comprehension when reading nonfiction texts only. Yet, further studies that employ larger samples of
students and reliable measures are still needed in order to increase the generalizations of
the present findings into other linguistic and cultural contexts.
Appendix I

Prereading Activities (Fiction Text)
Prereading questions

1. What pieces of furniture would you need to remove from a regular classroom in order to create a rain forest display?

2. What must be included to make the rain forest believable?

3. Who might you invite to explore the rain forest display?

4. Fill in the table with the sights, sounds, and smells that could be found in a rain forest.

<table>
<thead>
<tr>
<th>Sights</th>
<th>Sounds</th>
<th>Smells</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
**Vocabulary Power**

1. **Investigate:** Look into to find out something

2. **Enthusiastically:** In a way that shows strong agreement

3. **Transformed:** Changed; made to look or be different

4. **Compromise:** agree on something

5. **Habitat:** The environment in which an organism lives or grows

6. **Tropical environment:** A hot environment

**Pictures**

![Picture 1](image1)

![Picture 2](image2)
Appendix II

Prereading Activities (Nonfiction Text)
Prereading questions

1. Whom do firefighters help?

2. Do firefighters work by themselves or as part of a group?

3. Besides fighting fires, what other things are firefighters called upon to do?

4. Think and fill the table below with words that describe how each worker’s efforts benefit the community.

<table>
<thead>
<tr>
<th>Police officers</th>
<th>firefighters</th>
<th>Sanitation workers(cleaners)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Vocabulary Power**

1. **Thrilling**: an exciting feeling.
2. **Fiercely**: very great or strong.
3. **Demanding**: ask for as a right.
4. **Buzzers**: an electrical device that makes a buzzing sound as a signal.
5. **Satisfaction**: anything that makes you feel pleased and contented.
6. **Skyscraper**: a very tall building.
7. **Equipment**: supplies, what one is equipped with.

**Pictures**
Appendix III

Reading Comprehension test (Fiction)
Bolivia Raab is staying with her aunt and uncle, the Goldings, for six months while her parents are working in Turkey. One afternoon her friends – Rory, Derek, DeDe, and Aldo- come over to see her parrot, Lucette. They say she should take the bird to the “rain forest” that the school nature club has set up in a classroom. Bolivia thinks this may be too much excitement for her pet, but she agrees to think about it.

On Monday, as soon as they finished eating their lunches, Aldo took Bolivia to peek inside the room that the nature club had transformed into its rain forest. Even though neither the humidifier nor the heater was turned on when she arrived, Bolivia could still feel the dampness and smell the earthy odor in the air. There was a soft cushion of soil underfoot as she walked inside the room.

Mr. Peters, the adviser to the club, was there, busily watering the rubber plants.

“Oh, hello,” he said to them. “Have you come to investigate another corner of the world?”

“This is a girl from my homeroom named Bolivia Raab,” said Aldo, introducing his classmate to the teacher.

“She’s got a real live parrot at home. I asked her to bring it to our club tomorrow.”

“A parrot? That’s fantastic!” exclaimed Mr. Peters. “What type is it?”

“She’s a green Amazon parrot from South America,” Bolivia exclaimed.

“I’ve had her since I was very young, and I’ve taught her to speak a little.”

“Wonderful!” said Mr. Peters enthusiastically. “I bet she’d feel right at home here in our rain forest. Will you bring her to school tomorrow?”

Bolivia really was intrigued by the idea of Lucette visiting the rain forest. It seemed only fair that the bird should be given the experience. She had lived for so many years away from the tropical environment that was a parrot’s natural habitat.
Bolivia worried that a whole day at school was more than Lucette needed. It was stressful enough for a student. Imagine how it would be for a bird!

Bolivia thought about all the students who would try to touch Lucette during the day when she wasn’t around to protect her. There was bound to be some wise guy who would poke the parrot and possibly hurt her.

Mr. Peters seemed to guess what she was thinking. “We’d be very careful that no harm comes to your bird,” he reassured her.

“Let me see if my uncle can drive her over to school in the afternoon in time for your club meeting,” Bolivia offered. That seemed the perfect compromise. An hour and a half in the afternoon should be enough rain forest adventure for Lucette.”

**Q.1 Answer the following questions.**

1. What type of a story is the story you read above? How do you know? (Literal reading comprehension)

2. Write a suitable title for the story you read above. (Literal reading comprehension)

3. In what ways is the classroom like a real rain forest? In what ways is it unlike a rain forest? (Literal reading comprehension)

4. Why is Bolivia unsure of whether to bring her parrot to school? (Literal reading comprehension)
5. Summarize the beginning of the story in 3 main events. (Literal reading comprehension)

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-----------------------------------------------------------------------------------------------
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6. Why does Bolivia agree to bring Lucette to school when she is worried about Lucette’s safety there? (Literal reading comprehension)

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7. Do you think Bolivia’s decision to bring Lucette to the rain forest room is a good one? Why or why not? (Higher order comprehension)

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-----------------------------------------------------------------------------------------------
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-----------------------------------------------------------------------------------------------

8. What do you think happens when the parrot gets to school? (Higher order comprehension)

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Q.2 Write your own sentences using the following keywords. (Higher order comprehension)

1. Investigate: ------------------------------------------------------------------------------------

2. Habitat: ----------------------------------------------------------------------------------------

3. Compromise: ---------------------------------------------------------------------------------

4. Tropical: -------------------------------------------------------------------------------------
Appendix IV

Reading Comprehension Test (Nonfiction)
Fire!

There are 35,000 fire departments in the United States and about 1.5 million firefighters. This selection from the book *Fire!* shows the importance of firefighters to their communities, both now and long ago. It also shows how their work is important to the firefighters themselves. It gives them the sense of belonging to a community, as well as the satisfaction of saving lives.

When a call comes in, whether it’s a report of flames at a country farm or smoke on the forty-eighth floor of a skyscraper, firefighters feel the same emotions. What will it be like? Will I be able to help? But every town is different; every department does things a different way.

They all have different names for their equipment and different systems for getting things done. In big cities, people get paid to be firefighters. In small towns, they usually don’t. But one thing is the same. It’s always challenging, always demanding...always thrilling.

You are a firefighter. People count on you to come the moment they call. But you never know when that call will happen, so you are always ready. You check your equipment. You check your equipment again. You might sleep at the fire station a few nights each month or you might sleep in your house with a beeper at your bedside. But you always wait for that moment when you hear the call for help.

The station house is a second home to you. The people you work with are more than just your co-workers. They are the people you trust with your life. They have become like family, brothers and sisters you love fiercely, even if sometimes you get on one another’s nerves. You wait and check and practice. And then it happens...when the bells and buzzers sound in the station house, there is a great burst of activity. Poles are slid down, gear is pulled on. Firefighters call these runs jobs or workers. Let’s pretend that for just one day, you are a big-city firefighter. You’ve got a worker!
Unlike small-town fire departments, which keep all their equipment in one place, big-city fire departments keep their trucks in buildings all over town, just a few trucks to each building. Each truck has a team. There’s a driver who take care of the rig, an officer who’s in charge of the crew, and firefighters who tackle the flames or mount the rescues. In the old days, those firefighters were called “back-steppers” because they used to ride on the back of the truck, hanging on for dear life. This was very dangerous, so new trucks carry them inside.

Q.1 Answer the following questions briefly.

1. What type of a text is the text you read above? Why? (Literal reading comprehension)

2. Why is the firefighters’ work important to them? (Literal reading comprehension)

3. Why must a firefighter be ready at all times? (Literal reading comprehension)

4. Why do you think big-city fire departments keep their fire trucks in different buildings all over town? (Literal reading comprehension)

5. In your own opinion, which one in the team has the most important job, a driver, an officer, or a firefighter? Why? (Higher order comprehension)
6. Write the cause for the following effect. (Literal reading comprehension)

Effect: In the old days, those firefighters were called “back-steppers”.

Cause:____________________________________________________________________________________________________

7. Would you like to be a firefighter? Give two reasons. (Higher order comprehension)

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

8. Based on what you have read so far, what else do you predict this selection will tell you about firefighters? (Higher order comprehension)

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

9. Summarize the text above in a paragraph of 8 to 10 sentences. (Literal comprehension)

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________
Q.2 Put each underlined keyword beside its definition. (Literal reading comprehension)

1. an exciting feeling. ----------------------
2. very great or strong.------------------
3. ask for as a right.---------------------
4. an electrical device that makes a buzzing sound as a signal.-------------------
5. anything that makes you feel pleased and contented.------------------------
6. a very tall building.---------------------
7. supplies, what one is equipped with-----------------------------

Good Luck!
Appendix V

Lesson Plan
Lesson Plan

A – Teachers: Mrs. Lilian Alam and Mrs. Youssra Abihaidar (English Language Teachers) teaching upper elementary classes.

B – Groups: Fourth Graders

1. Section (A): control group
2. Section (B): experimental group

C - Objectives:

1. Answer literal and higher order comprehension questions after reading a fiction text.
2. Answer literal and higher order comprehension questions after reading a nonfiction text.

D – Activities:

1. Fill a pre-reading sheet. (Experimental group only)
2. Make fiction and nonfiction reading comprehension tests.

E – Setting (time and place):

The study will take place in the students’ regular classrooms in order to provide a familiar environment, far from any distractive resources. The students in both sections, the experimental and the control group, will be given 60 minutes to complete the tests. Only students in the experimental group will be given 15 minutes to complete the pre-reading sheet distributed to them before the posttest stage. The fiction and the nonfiction tests will be given to students on two different days.
F – Information for the Teacher

The present study will employ a pretest-posttest control group experimental design and will be conducted on fourth graders in order to investigate the effect of activating background knowledge on literal and higher order reading comprehension. The subjects will be assigned to control and experimental conditions. Intact classes will be randomly assigned into experimental and control conditions, and flipping the coin will do that.

First, students in the experimental and the control group will be given two reading comprehension tests that match with their level; the tests will measure their literal and higher order comprehension of fiction and nonfiction texts.

In the first treatment, students in the experimental group will be given a number of prereading questions to answer prior reading a fiction text. The purpose behind pausing these questions prior reading the text is to activate the students’ background knowledge and help them relate their own experiences in life to what they read and reflect on that in their answers to different types of questions paused in the text. Students in this group will be given this treatment again, but this time they will be reading a nonfiction text.

In the second treatment, students will be given a set of vocabulary words with their definitions. The keywords will be taken from the text that they will be reading afterwards. Therefore, students will have the chance to be exposed to difficult and new words’ definitions prior reading the text. Later, students will be given the fiction text to read and comprehend, then answer a set of questions. Students in this group will be given this treatment again, but this time they will be reading a nonfiction text.

In the third treatment, students will be given some pictures related to the text prior reading it. The purpose behind this treatment is to use the pictures in activating the students’ background knowledge about the topic, and help them visualize what they
read, and draw images in their minds about it. Later, students will be given the chance to read the fiction text and answer various types of questions. Students in this group will be given this treatment again, but this time they will be reading a nonfiction text.

Students in the control group will not be given any of these three treatments. Instead, they will be taking a spelling lesson for 15 minutes only each time they have a reading comprehension test.

In the posttest stage, students in both groups will be given two reading comprehension tests.

During the posttest stage, students in both groups will not be allowed to pause any question related or unrelated to the test. The students will be asked to submit the tests on time, after 60 minutes. No extra time will be given to any student for any reason. Students will also be asked not to submit their papers before half the time is over. After 30 minutes, students will be allowed to submit after they edit and revise their work. In order not to interrupt students who are still having the test, those who submitted their tests will be asked to read their library books until everyone finishes and submits the test.
References


