The Role of Background Knowledge in Enhancing Reading Comprehension

Ibrahim Mohamed Alfaki[1] & Ahmed Gumaa Siddiek[2,*]

[1]Wadi El-Neel University, Sudan & King Abdul Aziz University, KSA

[2]English Department, Shaqra University, KSA

*Corresponding author: Head of English Department, Shaqra University, P.O.Box 18 – Dawadami 11911, KSA. Tel: 966-536-872-406. E-mail: aahmedgumaa@yahoo.com

Received: November 27, 2013 Accepted: December 12, 2013 Online Published: December 18, 2013

doi:10.5430/wjel.v3n4p42 URL: http://dx.doi.org/10.5430/wjel.v3n4p42

Abstract

Reading comprehension is attained through successful interaction between the reader and the text. This interaction is the major factor that plays the most important role in comprehension. Accordingly, background knowledge will be of primary importance for EFL readers. So schema-based, pre-reading activities should be used for activating such background knowledge. It is assumed that prior knowledge activation requires pre-reading activities. The present study, aims at investigating the role of activating background knowledge in reading comprehension through text previewing. In this study a previewing strategy called THIEVES is used to verify this hypothesis. The researchers hypothesize that if students preview a text before reading it, they are likely to understand its content better. In order to investigate this, we conducted an experimental study using a t-test as a statistical measure of the data. We arrived at the conclusion that previewing a text through THIEVES as a prior knowledge activator - facilitates better comprehension. We found a positive correlation between previewing a text through THIEVES as a pre-reading activity (that aims to activate prior knowledge) and better reading comprehension.

Keywords: *THIEVES; reading enhancement; comprehension; prior knowledge*

1. Introduction

(THIEVES) is a strategy for previewing textbooks, created by (Suzanne Liff Manz), an educational therapist and instructor at Nassau Community College in Garden City, NY. It was published in The Reading Teacher Volume 55 Number 5 in February, 2002. This activity is said to help students with comprehension by allowing them to preview the text structure in an organized manner. This pre-reading strategy will allow students to "steal" information before they actually begin reading the chapter. The Acronym (THIEVES) stands for:

[**T**]itle – Students sometimes skip the title, but it provides valuable information by establishing the topic and the context of the chapter.

[**H**]eadings – Headings indicate the important sections of the chapter. They help students identify the specific topics covered.

[**I**]ntroduction -The introduction provides an overview of the chapter. It may come after the title and before the first heading.

[**E**]very first sentence in a paragraph – First sentences are often the topic sentences of the paragraph, and by reading these a student can get an idea of the information that will be contained in the chapter.

[**V**]isuals and [**V**]ocabulary – Students should look at all pictures, charts, tables, maps and graphs contained in the chapter. They need to read the captions and labels on each. This enables students to learn a little about the topic before they begin to read.

[**E**]nd-of-Chapter Questions. Many texts contain a summary at the end of the chapter. Students can read the summary to activate prior knowledge and give them an idea of the important concepts contained in the chapter.

[S]ummary enhances comprehension and retention of the information and ideas encountered during reading or

viewing media.

1.1 Statement of the Problem

Encouraging reading and developing reading skills in EFL classes is almost neglected in our education in the Sudan, although reading is the fastest means of acquiring knowledge. So this paper deals with this issue through the use of THIEVES strategy to enhance comprehension by previewing the text before doing the reading comprehension.

1.2 Aim of the Study

Thus**,** the aim of this study is to investigate the role of background knowledge activation in improving reading comprehension in an EFL setting. It aims at arousing foreign language teachers' awareness about the importance of activating learners' prior knowledge through pre-reading activities to increase their understanding of reading texts.

1.3 Research Questions

We are raising these questions in this study:

1. How does text previewing through THIEVES approach (which aims to activate learners' prior-knowledge) help learners in comprehending a reading text?

2. What is the effect of previewing a text through THIEVES as a pre-reading activity (that aims to activate prior knowledge) on students' achievement in reading comprehension?

1.4 Research Hypotheses

1- Previewing a text through THEIVES as a prior knowledge task facilitates better comprehension.

2- There is a positive correlation between previewing a text through THEIVES as a pre-reading activity (that aims to activate prior knowledge) and better comprehension of a reading text by the learners.

3- Previewing a text through THIEVES (which aims to activate learners' prior-knowledge) doesn't help the learners in comprehending a reading text.

4- There isn't any correlation between reviewing a text through THIEVES as a pre-reading activity (that aims to activate prior knowledge) and better comprehension of a reading text by the learners.

1.5 Significance of the Study

This study is targeting all parties involved in the process of teaching and learning. We are targeting EL teachers as they are the mechanism of carrying out teaching and developing students' performance in all language skills. We are also targeting the learner's as the ultimate goal of every educational process. This study is also of significance to textbooks designers who develop materials that help improve all learners' language skills with particular interest in enhancing reading comprehension.

2. Relevant Literatures

2.1 Background Knowledge

Background knowledge and prior knowledge are generally used interchangeably. For example, Stevens (1982) defines background knowledge quite simply as what one already knows about a subject. Dochy et al., (1995) provide an elaborate definition, describing prior knowledge as the whole of a person's knowledge, including explicit and tacit knowledge, metacognitive and conceptual knowledge.

Background knowledge is supposed to consist of two main components: "our assimilated direct experiences of life and its manifold activities, and our assimilated verbal experiences and encounters" (Swales, 1990, p.9*)*.It is a reader's background knowledge of the topic, vocabulary, and structure of a text. Prior knowledge may come from experience or from reading. When a reader activates his prior knowledge, he is linking what he already knows to what he is currently reading. A text does not by itself carry all meaning. The reader brings information, knowledge, emotion, and culture – that is schemata, to the printed word (Brown 2001). Reading is only incidentally visual. More information is contributed by the reader than by the print on the page." This indicates that our understanding of a text depends on how much related schema we, as readers, possess while reading. Consequently, readers' failure or confusion to make sense of a text is caused by their lack of appropriate schemata that can easily fit with the content of the text. This lack of appropriate schemata can be either formal or content-based on (Brown,2001),schemata includes what we know about people, the world, culture, and the universe, while formal schemata consists of our knowledge about discourse structure. Prior knowledge is necessary for retaining information from a text. Activating prior knowledge before

reading helps students get ready to read and be open to new information. It focuses students' reading and helps them read for a purpose. Having a purpose and inquiring about the subject before reading helps students take ownership of their own reading experiences.

2.2 Activating Background Knowledge

It is believed that the readers' background knowledge (schema) interacts with the content of the passage they are reading. So decoding a message more accurately needs the activation of vocabulary and structure knowledge as well as background knowledge. The aim of the present study is to determine whether schema activation has any effect on better reading comprehension. Comprehension is seen as the interaction between top-down processing from activated schema and bottom-up processing from concepts expressed by the text (Bensoussan, 1998). Similarly, Cook (1997) believes that schema theory deals with the reading process where readers are expected to combine their previous experience with the text they are reading. The EFL learner must deal with both the linguistic complexities of a text such as vocabulary and syntax as well as the content, which may be loaded with unfamiliar target culture cues; consequently, the challenge for the EFL learner is great (Anderson & Pearson, 1984). So it is quite essential to activate the students' background knowledge before reading a text through a series of activities which would make them prepared for reading and lead to a better comprehension (Yule, 2000). In spite of the crucial role of schema activation, it is often forgotten or ignored in discussion of reading texts (Yin, 1985). Thus, this is probably the role of the reading teacher who is supposed to bring his learners' consciousness about the importance of their prior knowledge and to activate this knowledge.

Activating prior knowledge is something that we do naturally as readers. We always relate what we're reading to something we know. As a matter of fact when we read we really have to think about those connections.

Activating Prior Knowledge refers to the activities and strategies that used to bring out what students already know about a topic. By putting the upcoming lesson material into a familiar context for the students, the teacher is giving them a context into which they can then assimilate the new information and understand it. In fact, Activation of prior knowledge makes up a great amount of the process of reading comprehension. It is very important to the reader because he can then make predictions about what is going on in a text. Schema is activated through textual cues provided by the writer in his text. These cues serve as stimulus for the reader who unconsciously brings them from his already stored information that aids in the comprehension of what is new.

Teachers can activate students' background knowledge in a number of ways (Fisher & Frey, 2009). As an instructor, part of the teacher's role in observing instruction is to determine whether students' background knowledge was activated. In other words, it's not enough to look for instructional techniques, classroom management procedures, grade-level content, and background knowledge development. Putting all of this to use requires attention to the ways in which background knowledge is *activated* during a lesson. To understand how background knowledge activation works, a close glance to spreading activation should be paid.

2.3 Spreading Activation

Schemata are activated through a phenomenon called "Spreading activation". Once the reader encounters a familiar input, one part of his schema is activated then this activation spreads out around what remains as relevant to the new input. It is an important explanatory construct that was developed within network theory as a fundamental memory retrieval mechanism (Anderson & Bower, 1973; Collins & Loftus, 1975; Collins & Quillian, 1969). Spreading activation is a term used in psychology, psycholinguistics and cognitive linguistics. It refers to a model describing processes thought to be taking place during language production and comprehension and explains how the mind processes related ideas, especially semantic or verbal concepts. One of the merits of this model is that it captures both the way knowledge is represented and also the way it is processed. In this model, knowledge is represented in terms of nodes and associative pathways between the nodes. Specifically, concepts are represented in memory as nodes, and relations between the concepts as associative pathways between the nodes. When part of the memory network is activated, activation spreads along the associative pathways to related areas in memory. This spread of activation serves to make these related areas of the memory network more available for further cognitive processing (Balota & Lorch, 1986). Speed and probability of accessing a memory is determined by its level of activation, which in turn is determined by how frequently and how recently we have used the memory (Anderson, 1995).

According to the theory of spreading activation, each semantic concept has a node in the neural network that is activated at the same time as the nodes for related concepts. According to this framework, concepts are represented in memory as nodes and relations are represented as associative pathways between the nodes. When part of the memory network is activated, activation spreads along the associative pathways to related areas in memory. This spread of

activation serves to make these related areas of the memory network more available for further cognitive processing. If a person is presented with the concept "dog," nodes for concepts like "bark," "beagle" and "pet" might be activated, priming him to think about these related words.

The importance of this model is that it captures both the way knowledge is represented and also the way it is processed. In this model, knowledge is represented in terms of nodes and associative pathways between the nodes. Specifically, concepts are represented in memory as nodes, and relations between the concepts as associative pathways between the nodes. When part of the memory network is activated, activation spreads along the associative pathways to related areas in memory. This spread of activation serves to make these related areas of the memory network more available for further cognitive processing (Balota & Lorch, 1986). Speed and probability of accessing a memory is determined by its level of activation, which in turn is determined by how frequently and how recently we have used the memory (Anderson, 1995).

Thus spreading activation model also best accounts for an unconscious process called associative priming (Ratcliff & McKoon, 1981). Associative priming refers to the facilitation in access to information when associated items are presented (Anderson, 1995). For example, words are named faster in the context of an associated word (e.g., bread-butter) than in the context of an unassociated word (e.g., table-window) and also a word is recognized more quickly when it is preceded by a word from the same sentence or proposition (e.g., run-fast) than when it is preceded by a word from a different sentence or proposition (e.g., common-fast).

2.4 Schema Activation in Reading

One assumption about schema activation is that some words, or groups of words, or the title of a text, are highly suggestive and they can signal a certain schema. Textual stimuli affect a schema in two ways. If a stimulus is highly suggestive of a certain schema, that schema as a whole can be activated. For instance, the mention of a fire brigade may activate a "fire accident" schema. But more often than not, one such stimulus is insufficient for schema activation, it can just remind one of a certain slot which can fit into several schemata. The mention of, for example, "acid" can signal a slot for schemata as "acid rain", "food processing", and so on. As more and more stimuli are provided, the possibilities become fewer and fewer and, ideally, the reader may concentrate on the one that is anticipated by the writer. If besides acid, other stimuli such as "litmus paper", "Bunsen burner" and "test tube" are also present, then it is highly probable that a "chemistry lab" schema will be activated.

2.5 The Three Phases of Reading

Reading is possibly the most studied skill in the field of language teaching. The results of the researches conducted for many decades on the nature of reading—how people learn to process textual information—have resulted in various and contrasting theories about what works best in the teaching of reading. As a result, language instructors can choose from various teaching methods and techniques which help students to read in the second language (SL) or foreign language (FL). Reading activities have been suggested as devices to support the reader's interpretation of text and to prevent any possible failure in reading process (Karakas, 2002). Almost all recent dichotomies of reading activities involve the three stages of pre-reading, while-reading, and post- reading (Alyousef, 2006; Williams,1987) Texts used in the upper intermediate levels in EFL classes often have language, syntax, vocabulary and concepts specific to a particular area of study. Realizing how crucial reading is for our students, we can see the great importance of developing their reading ability. To achieve that, we should implement the methods and techniques that best suit our teaching situations. The aim here is to describe the principal theories of reading and examine some guidelines for implementing a theory of reading which will help teachers develop their learner’s ability.

2.6 The Aim of the Three Phases

Dealing with techniques, Brown (2001) subdivides the techniques into pre-reading, whilst-reading, and post-reading phase. Each of these stages has its own characteristics, although they are related to one another. Each phase requires readers to use their knowledge in particular ways. There are actions readers use to get their knowledge ready for reading a particular text, for making sense of the text as they read and for learning from their reading activity. That is, the pre-reading stage leads to the while-reading stage and finally to the post-reading one. Going through all the three stages respectively, the reader gets a better understanding of any text s/he has already tackled and ultimately becomes responsible for his/her own learning. The three phases’ ultimate aim is to train the students to be efficient readers in the foreign language. Other aspects have to be considered as well, such as the student’s interest and motivation to read. This view is also supported by William (1984), that the design of useful reading activities is one of teacher’s responsibilities in helping students develop their reading ability. And in designing reading activities, a three-phase procedure involving pre-reading, whilst-reading, and post-reading stages should be taken into consideration.

Following and implementing the three stages would help students to depend on themselves and on other resources as the primary source of information, rather than on teachers. This is where student's initiative/interaction comes into action. They start developing skills by themselves, which later become their own skills through interaction with the reading text. That is, our goal should ultimately be to encourage critical thinking and increase comprehension.

2.7 The Pre-reading Phase

Several reading researchers like Langer 1984, Adams and Collins 1979, have highlighted the point that reader's participation of bringing their knowledge and experience while reading a text is of great importance in reading comprehension. In order to bring learners knowledge and experience while reading, pre-reading activities are of great necessity.

2.8 The Aims of the Pre-reading Phase

The aim of pre-reading activities is to introduce students to a particular text. They may not just offer compensation for second or foreign language reader's supposed linguistic or socio-cultural inadequacies; they also focus exclusively on preparing the reader for likely linguistic, cultural and conceptual difficulties. As a first step, they help to activate readers' prior knowledge about the text's topic. Stoller (1994) states: "…Pre-reading activities can be utilized as an activator to students' already existing background knowledge, and to provide students with new information that will help them comprehend the passage."

Previewing a text with students- for example- should arouse their interest and help them approach the text in a more meaningful and purposeful manner as the discussion compels them to think about the situation or points in a text. The pre-reading activity also helps students identify the central theme of a story or the major argument of an essay.

There is a general agreement that the most significant for building and activating background knowledge is the pre-reading phase. Ringler and Weber (1984) believe that pre-reading activities elicit prior knowledge, provide background and focus attention. Ajideh (2006) maintains that pre-reading activities can be helpful in three ways: by building new schemata, activating existing schemata, and informing the teacher what the students know. Pre-reading activities are an excellent way for students to draw on their current knowledge and develop schemata prior to reading a given text. Connections between details and the overall structure of a particular schema are explored in class before students do any reading. The technique can be as simple as brainstorming on the blackboard or previewing.

2.9 The Importance of Pre-reading Stage

Pre-reading stage is important in building confidence and creating security within the learners before they approach a reading text.Pre-reading phase also can shed light on the different Rumelhart (1980) experiences and background knowledge that students bring to a text, influencing how they will read and learn from a particular text. By knowing what students bring to a text the teacher can provide students with appropriate scaffolds to make links between what is already known and new information presented in a text. As many current researches on reading have agreed on the theoretical view that meaning is not found in the texts only, researchers came up with the fact that understanding a reading text results from a communicative processes between readers and texts. In other words, reading is nothing but a conversation between the reader and the text. There is a great importance of pre-reading phase since it prepares the learners to read. It helps to activate learner's prior-knowledge about the topic of the text. Connectionists argue that a learner uses his existing information to understand the encountered input.

To create confidence and security within our learners, we should activate their background knowledge and schema in regards to the target text. This can be achieved through describing pictures, generating words that have relation with the topic, listing words on the board and having the students use them to make up a story, or showing the students' pictures related to the text and having them tell the story. These kinds of activities prepare the students for the task (reading) and familiarize them with the topic of the reading exercise. Also, they help the students to create expectations and arouse their interest in the subject matter of the written text. Harmer (1991) believes that we would not be able to get students to interact properly with spoken and written materials unless we ensure that their desire to read or listen has been awakened. He thinks that we have the responsibility to make students interested and to encourage them to tackle the text with positive anticipation especially where the subject matter of the texts may not be immediately appealing to them

Moreover, they serve to supply the reader with new information which he may encounter in the text. Thus the reader will be mentally prepared. In addition, the pre-reading phase helps to break readers' ice, that is to say, it ensures his psychological readiness to engage in reading. In other words, this stage invites readers' wills to read by increasing their interest and motivation. The readers will have a chance of peer interaction which will help them benefit from each other's schemas, hence, widening their knowledge stores with the possibility that one reader's interest and will

to read may infect that of another reader.

In conclusion, the pre-reading stage helps to make the next stages of reading more easily adaptable for the reader. As the reader progresses along the necessary reading stages, more skills begin to develop. Therefore, this stage is very important to orient students to any new material they don't know, to activate schema or previous knowledge of a topic, and to help motivate students. Also, without the pre-reading stage, (while reading tasks) might be more difficult and progressively less enjoyable. As a result, the reader may struggle and may withdraw from reading.

3. Research Method

In this research, the role of background knowledge activation will be done through previewing strategy (THIEVES); as a pre-reading activity will be explored from the perspective of schema theory. The study is designed to investigate the increase in readers' comprehension if their prior knowledge is activated before reading a text. Readers' prior knowledge activation is ensured through the prior knowledge activation strategy of text previewing (THIEVES).

This investigation will be carried out through an experiment divided into: Part One and Part Two. In Part One, participants in the experiment; Group1 and Group 2 will work on the first reading selection. In this part, the experimental group is Group2 and the control one is Group1. The experimental group; Group2 will receive the experiment's treatment. In Part Two, the experiment's treatment shifts to Group1 and Group 2 turns to be the control one. Here, learners will work on the second reading selection. In both parts of the experiment, the groups' reading comprehension will be tested by using the multiple-choice formats.

A T-test is going to be used to calculate results. T-test is widely used as a statistical method to compare group means. Using the paired t-test, we can compare the change in outcomes before and after the experiment is run.

3.1 Population & Sampling

It was not possible to conduct this investigation on the whole population because of cost, time and effort. However, it is important to choose a representative group which represent the general characteristics of the population of interest. We think that to conduct such a study, a highly homogeneous sample is needed. Therefore, we targeted the third year secondary school students' community. Members of the sample are randomly selected and assigned. Randomly means 40 students were randomly selected and grouped from all intact classes into two groups (Gr1 & Gr2). This way of sampling is to give creditability for the experiment validly and reliability. Moreover, it helps in ensuring that the sample is a nonbiased one. Furthermore, members chosen for the experimental group have equal chances for being chosen as representative of their genre.

3.2 Subjects

A total of forty, third year secondary school male students served as the subjects of the study. For the purpose of the research we looked for a homogeneous sample which has the same background. In order to make the subjects homogeneous and to avoid possible discrepancies, the subjects were selected from Al-Forsan secondary school students, who were reading for their final year. All the participants were between the age of 17 and 18 and all were native Arabic speakers. Subjects have been together and almost taught by the same teachers since they were at first year of primary school. On average, they have been studying English as a foreign language for 6 years. The subjects studied English at school, four periods per week (45 minutes per period). Based on their scores on the final exam of the first term, the subjects were categorized according to their levels. Then the sample is divided into two groups: Gr1 and Gr2. Each group consists of 20 student randomly assigned. They were not informed that they are subjects in a work of research to avoid bias with or against the experiments. Subjects were in their usual reading session environment, where they were supposed to read a passage and to work on some reading comprehension exercises.

According to Carrell (1987), schemata are not always readily available for activation in readers. She maintains that a reader must reach a certain level of proficiency in order to take advantage of schemata during the reading process. For this reason, students of grade 3 of the secondary school, whose language proficiency – as it is supposed to be- has reached an intermediate level, were chosen. In addition to similarity in proficiency, subjects shared the same culture, native language, educational background and age. The selection of subjects was carefully performed so as to minimize differences among variables and reduce the possibility of unsystematic variations during testing.

3.3 Reading Materials

Two selected texts were taken from English for Saudi Arabia3 and 5 respectively. They were selected through simple random sampling, the lottery method**.**

3.4 Material One

Passage (1) is entitled "Healthy Eating". It is about 607 words long. It is about food. The reader is given details about healthy food, its resources, nutrients it contains and what happens if there is a deficiency in one or more of them. Also, material one includes ten multiple choice questions with for options where only one is the correct answer.

3.5 Material Two

Material two "The Planet Earth" (see appendix II) is taken from English for Saudi Arabia 5. It is a reading passage consists of about 391 words. It is about the planet, its position in the solar system, its atmosphere, its seasons, water and life on it. The text vocabulary is familiar to students but it includes few terms which will be dealt with during the previewing process.

Material two also includes ten multiple choice questions which aim to test students' comprehension of the target passage. It has the same format and the same instructions as in material one.

3.6 Procedure

In this study, THIEVES strategy which is a text previewing strategy is given as a treatment. Multiple choice questions in written form have been used in order to find out the participants' understanding with and without text previewing. The experiment is divided into two parts: Part One and Part Two. In Part one, readers work on Text (1) and in Part Two they work on Text (2).In the first part of the experiment, Gr1 of the sample is the control group and Gr2 serves as the experimental one. In Part Two, Gr1 and Gr2 exchange roles where Gr1 represents the experimental group and Gr2 plays the role of the control one.

In both parts of the experiment, the group which serves as the experimental group receives the treatment, whereas the one which stands as the control group receives no treatment. The treatment and the type of testing are the same in both parts of the experiment.

The two parts of the experiment have the same organization. In part one, the students, who are members of the experimental group (Gr2), preview Text (1). Then, students go on reading the text silently for a period of time. Finally, students are asked to answer comprehension questions namely 10 multiple-choice items. The control group (Gr1) members do not preview Text (1) and go directly on reading it. After finishing reading, they answer the same multiple-choice questions of the experimental group.

In part two, the same procedure is followed. The only difference is in the text and the role played by the groups. After previewing, students in group (1) read the text and answer 10 multiple-choice items. Whereas, students who are members of the control group; Gr2 read directly text (2) without previewing and answer the 10 multiple- choice questions.

3.7 Treatment

The treatment which will be applied in the present study is prior knowledge activation strategy called THIEVES. The strategy aims at activating prior knowledge. Members of the experimental groups {group (2) in Part One and group (1) in Part Two} are the ones which receive this treatment. They are supposed to go on text previewing before reading it. Readers practice text previewing to bring out what they already know about the topic and what may be the content of the text, before they start reading it. This is done by the teacher's guidance who acts as a facilitator for using this strategy. The teacher leads readers to bring out their background knowledge to the surface.

- First, he begins the previewing process by asking students to take two minutes looking at the passage and how it is arranged.
- Then he guides the previewing session by discussing all its components (see appendix III) trying to activate their prior knowledge.
- Third, the teacher guides students' discussion while they are previewing. That is to say, he tries to get as much as he could of what they know about the topic of the text they are previewing, and to ensure that they do not run the risk of wasting time and effort to activate the wrong schemas which may hinder text's comprehension.

3.8 The Environment of the Experiment

The experiment is done under certain conditions. These conditions concern timing, the type of reading and text removal while answering comprehension questions. These conditions are important to secure the experiment's success and to avoid the biasing of its results. The time of the reading session in the experiment is divided among the readers. The time devoted for each session is two periods (an hour and a half) to the experimental group. It is divided between text previewing, reading the texts and answering comprehension questions. Each activity takes the time it

needs to maximize its success. Within the control group, time allotted is one period. Here is the reading session's time division we applied in the experiment:

Table 1: Reading Session's Time Division

Reading session activities	Division of the session time (90 minutes)
Text previewing	45 minutes
Silent reading	15
Answering questions	15
Other activities	15

Readers in both groups; the experimental and the control one in both parts; Part One and Part Two, are asked to read silently. The control group is allotted time for only one period. Texts are removed after silent reading. Readers answer the multiple-choice exercise without referring to the text. They are not allowed to go to the text to check their answers or copy from it. They find themselves with the information remained in their memories. Their comprehension is the only thing which aids in answering the exercise items.

Miscomprehending the text is reflected in failing to answer those items. Therefore, text removal is essential in reflecting readers' comprehension without any bias in the obtained results.

4. Data Analysis

Introduction: The primary objective of this study was to investigate the effect of schemata activation (background knowledge) through text previewing on the reading comprehension of learners of English as a foreign language. In order to explore the dynamic effects of these two variables, the study was carried out through an experiment divided into two parts: Part One and Part Two. In Part One, participants in the experiment; Group1 and Grpou2 work on the first reading selection. In this part, the experimental group is Group2 and the control one is Group1. The experimental group; Group2 receives the experiment's treatment which is THEIVES. In Part Two, the experiment's treatment shifts to Group1 and Group 2 turns to become the control One. In this stage, students work on the second reading selection. In both parts of the experiment, the groups' reading comprehension will be tested using multiple-choice formats. The independent variable in this study was the use or non-use of THIEVES strategy to preview the text. The measure of analysis was the mean scores of students on the two groups. Once the two experiments had been performed, students' answers were marked out of ten. The number of the correct answers was tabulated. Bar diagrams and tables were utilized for the presentation of data. The scores in each part of the experiment have been shown separately.

The study aims to find whether activating readers' prior knowledge through text previewing increases their comprehension or not. To arrive to this end, the experiment results are to be reported then discussed. Since the experiment is divided into two parts; Part One and Part Two results will be reported and discussed into two sections.

4.1 Section One

The results obtained in Part One of the experiment are reported with no discussion or comments on them.

4.1.1 Presenting the Raw Data

In Part One of the experiment, readers work on Text (1) (See appendix I). Gr1 is the control group which receives no treatment and Gr2 is the experimental one which receives the experiment's treatment. The two groups' scores in the multiple-choice exercise, which aims to test their reading comprehension, are presented in the following table.

Table 2: The Experimental and Control Groups' Scores in Part One of the Experiment

	Gr1 Control	Gr2 Experimental
1	4	9
2	5	10
3	7	8
4	5	10
5	4	9
6	8	10
7	6	8
8	6	9
9	7	7

10	3	9
11	8	10
12	5	6
13	6	8
14	9	3
15	6	8
16	3	10
17	3	9
18	6	9
19	5	10
20	10	8

Table (2) represents students' scores in the multiple-choice exercise (See appendix 1) which aims at testing readers' comprehension. They are arranged into two sets one for the control group Gr1 and the other set for the experimental one Gr2. The highest score for the control group is 10 and the lowest one is 3. For the experimental group, the highest mark is also 10 and the lowest one is 3.

4.1.2 The Scores Frequency Distribution

We will present the frequency distribution through the following graph:

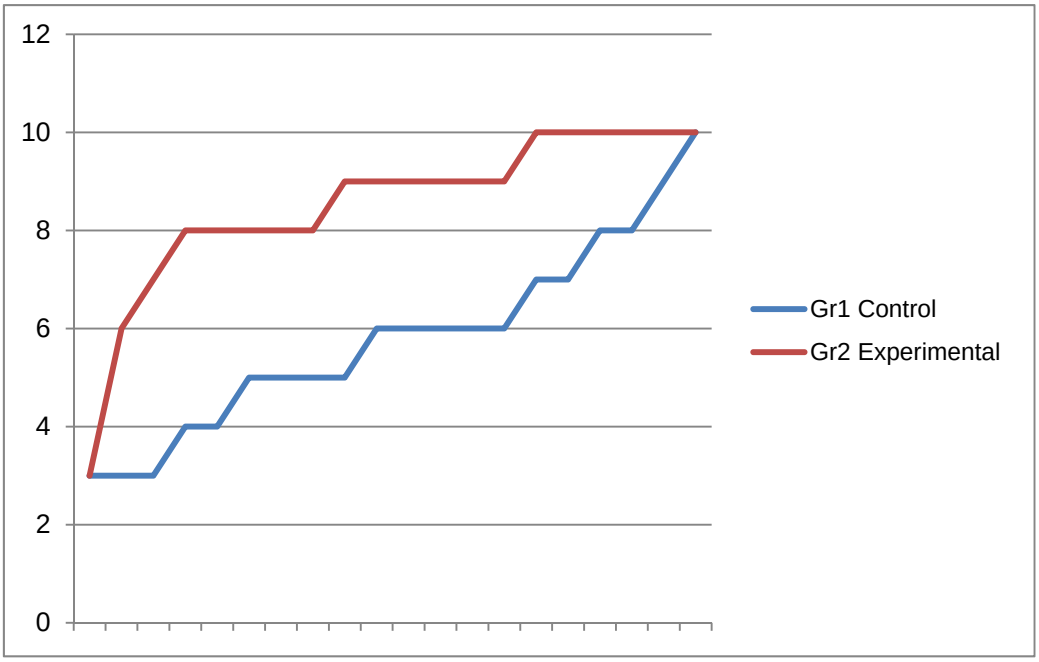


Figure 2: Scores' Frequency Distribution in Part One of the Experiments

Figure 2 states a clear description of the readers' scores. It shows the frequency of each score. From this figure, we can also show the median and the mode of each set of the scores. It is worth mentioning that the median is the central value of a set of scores and that the mode is the most frequent score in a set of scores. We notice that the control group Gr1 scores range from 3 to10 and the median of this set is the value 6. We also notice that score 6 is repeated 5 times. Thus, the set of the control group's mode set is the value 6.

For the experimental group Gr2, the scores range from 3 to 10. The median of this set is the value 9. The mode of the experimental group set of scores is the score 9.5 because the scores 9 and 10 each repeated six times.

4.1.3 Calculating the Mean

Calculating the mean helps in stating the difference between the scores obtained by the members of the control group; Gr1 and the experimental one; Gr2. Table (3) below, shows the means of both groups; the control and the experimental in Part One of our experiment:

Table 3: Means of the Experimental and Control Groups' Scores in Part One of the Experiment

	Gr1 Control	Gr2 Experimental
Total	116	170
Mean	5.8	8.5

Table 3 shows that the mean of the experimental group; Gr2 which is 8.5 is higher than the mean of the control group; Gr1 which is 5.8. Although it is early to make conclusions, we can say that the scores of the experimental group are higher or better than those of the control one.

4.1.4 T-test

The T-test should be used to show the significance or non-significance of our findings. It is the tool which enables us to decide whether the I V is behind the superior performance of the experimental subjects.

4.1.4.1 Definition

The t-test is a statistical test which helps in drawing statistical inferences from an experiment's data. This test gives a mathematical formula for computing the value of the observed t. This will later be compared to the tabulated (t) after specifying the level of significance and the number of the degrees of freedom.

4.1.4.2 The Computation of the Observed-t

Using t-test SPSS calculator, the following results were obtained. In the following table, we can see the results of part one of the experiments. The mean standard deviation and standard error mean of both the experimental and control groups.

Table 4: Shows the Means and Standard Deviation in Part One70

Tests	N	Group1 control		Group2 experimental	
		Mean	SD	Mean	SD
Scores	0	5.80	1.96	8.50	1.70

Then we used these results to compute the observed t-test version 19 to obtain the following data.

Table 5: Independent Samples Test of Part One

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									90% Confidence Interval of the Difference	
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
data	Equal variances assumed	.732	.398	-4.648-	38	.000	-2.700-	.581	-3.679-	-1.721-
	Equal variances not assumed			-4.648-	37.249	000	2.700-	.581	3.680-	1.720-

4.1.4.3 Conclusion

The results of the Independent samples (t) test in Table (5) shows that in (part1) there is a significant statistical difference between the scores of Gr1 control (who did not take the treatment) and Gr2, the experimental who took the treatment. It can be seen that Gr2, the experimental group achieved a notable improvement in the test score after their background knowledge was activated through the text previewing strategy, and this change was statistically significant at level (0.($t=4.648$, $p<0.001$)

This indicates that background knowledge activation, through text previewing is effective in enhancing reading *comprehension* among EFL readers.

4.2 Section Two

The same procedure for analysing the data in Part One will be used in Part Two of the experiment. Because the description of the results obtained in Part One of the experiments was promising, the researcher is optimistic that the description of those obtained in Part Two will lead to the same conclusion.

4.2.1 Presenting the Raw Data

In Part Two of the experiment, the subjects work on Text (2) (See appendix II). Gr1 serves as the experimental group which receives the treatment and Gr2 is the control one, which its members do not preview the text before reading.

Both groups answer the ten multiple-choice items after finishing reading (See appendix II) intending to test their reading comprehension. The scores the two groups obtained are the following:

Table 6: The Experimental and Control Groups' Scores in Part Two of the Experiment

	Gr2 Control3/1	Gr1 Experimental3/3
1	7	9
2	10	10
3	5	8
4	8	9
5	10	8
6	6	10
7	5	9
8	5	9
9	2	9
10	9	7
11	7	8
12	2	4
13	5	10
14	4	10
15	3	9
16	8	8
17	5	7
18	3	9
19	10	9
20	6	8

Table (6) shows the subjects' scores in Text (2), those of the experimental group; Gr1 and the control one; Gr2. Scores of the experimental group range between 4 and 10. In the control group, the highest score is 10 and the lowest one is 2.To organize the raw data in a more meaningful way, we need to know about the characteristics of each score namely the scores' frequencies

4.2.2 The Scores Frequency Distribution

The two sets of scores the experimental group; and the control group differ in their characteristics. Each set has a particular frequency distribution. These characteristics show the difference between the two samples' performances. The following figure aims at showing that:

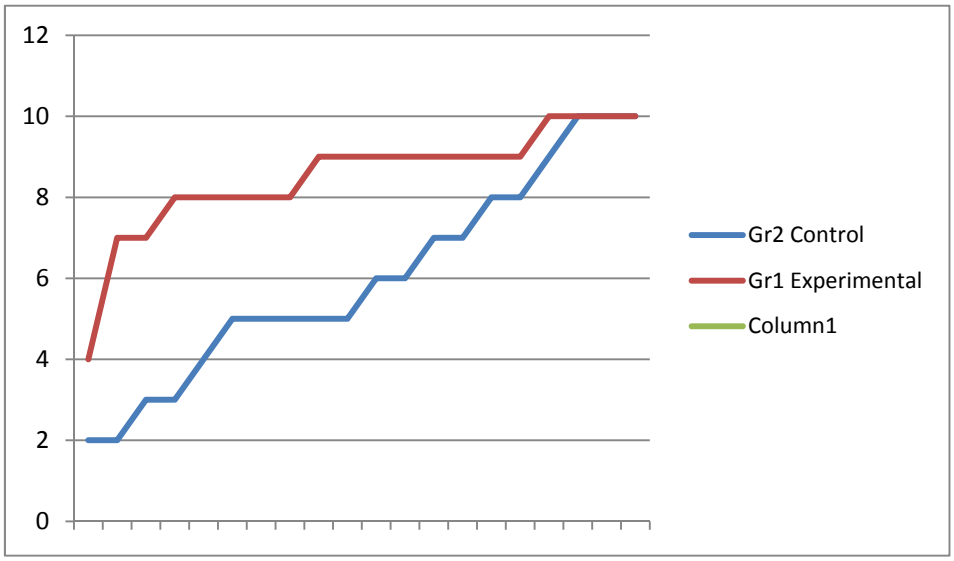


Figure 4: Scores' Frequency Distribution in Part Two of the Experiment

Figure 4 shows the frequency of each score obtained by the experimental as well as the control groups in Part Two of the experiment. Scores of the experimental group Gr1 range between 4 and 10 and the median is 9. Scores of the control group Gr2 range between 2 and 10 and the median is the value 6. The score 9 is repeated 8 times, thus the mode of the experimental group set of scores is 9. The mode of the control group is the score 5which is repeated 5 times.

4.2.3 Calculating the Mean

The following table (7) and figure (5) exhibits the two means of the experimental group; Gr1 and the control one; Gr2 in Part Two of the experiment:

Table 7: Means of the Experimental and Control Groups' Scores in Part Two of the Experiment

	Gr2 Control	**Gr1 Experimental**
Total	120	170
Mean	6	8.5

Table 8: Score Means by Mode of Presentation .Group2 Control without Text Previewing and Gr1 Experimental with Text Previewing

Tests	N	Group 2control		Group1 experimental	
		Mean	SD	Mean	SD
Scores	20	6.00	2.58	8.50	1.40

Tables (7&8) and figure (5) make it clear that the mean of Group 1 the experimental group in Part Two which has the Value 8.5 is greater than that of the control group, Group2 which has the value 6. We can make statistical inferences through the t-test to confirm that the IV is responsible for the superior performance of the experimental group over that of the control one.

But we cannot make a decision here without confirming these results with statistical test and check their significance.

4.2.4 The Computation of the Observed *t*

To calculate the observed *t in* Part Two of the experiment, we used the t-test calculator version 19. We proceeded in the same method in Part One. We used the t-test to obtain the following data.

Table 9: Group statistics in Part Two of the Experiment

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
Data	gr2_control	20	6.00	2.575	.576
	gr1_experimental	20	8.50	1.395	.312

Table 10: Independent Samples Test Results of Part Two

		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
Data	Equal variances assumed	8.391	.006	-3.817-	38	.000	-2.500-	.655	-3.826-	-1.174-
	Equal variances not assumed			-3.817-	29.273	.001	-2.500-	.655	-3.839-	-1.161-

The above tables (8,9,10) show a significant increase in the mean score of the tests score after the treatment appears in the experimental group,Group1 ($t= 3.817$, $p<0.001$). This indicates that background knowledge activation through text previewing affects positively in developing the ***reading comprehension*** ability among EFL readers.

4.3 Reporting the Results

These results are first presented in raw data. Second, they are organized in a more comprehensible way to show the characteristics of the scores obtained by the two groups namely their frequency distribution. The four sets of scores' means are calculated and compared. The comparison of the means proves to be helpless in establishing the

cause-effect relationship between the I V and the DV. The t-test statistical test is the test which we used in drawing statistical inferences to verify the hypothesis.

4.3.1 Reporting the Results of Part One

In Part One of the experiment, readers work on material one (See appendix I). Gr1 serves as the control group and Gr2 serves as the experimental one which receives the treatment. Subjects of both groups read the text silently then answer the multiple-choice exercise presented in material one. Readers' answers are marked.

The scores obtained by the control group; Gr1 and the experimental group; Gr2 tend to vary. In both groups, scores range between 3 and 10. By analyzing the two sets of scores in details, it was found that the control group scores have the value of 6 as median and the value 6 as mode, because the score frequency occurs 5 times. The experimental group scores in Part One of the experiment does not have a mode for the simple fact that two scores have the same frequency , but we can consider the mean of these two scores as the mode of the set which is the value 9.5.

The experimental group; Gr2 mean is greater than that of the control one; Gr1. The average of the experimental group is the value 8.5 and that of the control one is value 5.8. Through comparing the two values, we notice that 8.5 > 5.8. The t-test; statistical test that we conducted on the data we obtained in Part One of the experiment, helps in establishing the cause-effect relationship between the IV and the DV of our hypothesis. First, the value of *t* was calculated then it was compared to the critical value of *t.* Making use of the t-test formula, the value of *t* is found to be equal to 4.6487. Through, specifying 0.01 level of significance for 38 degrees of freedom, the value of the tabulated *t* equals 1.685. The two values are compared making it clear that 4.68 > 1.685. This comparison helps in concluding that our results are significant. Therefore, confirming that the supposition we made in our hypotheses three and four are correct ones.

4.3.2 Reporting the Results of Part Two

In Part Two of the experiment, subjects work on the material two (See appendix II). Gr1 serves as the experimental group which receives the treatment and Gr2 is the control one. As in Part One of the experiment, both groups go on reading silently the second text then answer the multiple-choice questions presented in material two with the difference that the experimental group previews the text before reading. Readers' answers are corrected and marked to have an idea about their achievements in reading comprehension.

The two sets of scores obtained by the two groups; the experimental one Gr1 and the control one; Gr2 show a noticeable difference in the two samples' reading achievements. Gr1 (experimental) scores range between 4 and 10 and those of Gr2 (control) range from the mark 2 to the mark 10. The mode of the experimental group scores is the score 9 because it occurs eight times and its median is the value 9. For the control group, the mode is the score 5 because it occurs five times and the median equals the value 5.5 .The means of the two samples are calculated and compared. The average of the experimental group; Gr1 is the value 6 and that of the control one Gr2 is the value 8.5. Through comparing the two values, we find that the experimental group’s mean is greater than that of the control one. As in Part One of the experiment, the t-test is used to show if the results obtained in this part of the experiment are also significant.

The t-test is used also in Part Two of the experiment to draw statistical inferences from the accumulated data. After the computation of the variances of the two samples' sets of scores and making the needed substitutions in the t-test formula, the *t* (observed *t* in Part Two of the experiment) value is found to be equal to 3.817. The level of significance chosen for this part of the experiment is also the value 0.1 and the number of the degrees of freedom is also the same (38 degrees of freedom). The value of the tabulated *t* corresponding to the mentioned level of significance and the number of the degrees of freedom is the value 1.686. The comparison of the observed *t** to the tabulated *t* shows that the value of the first is greater than the value of the second one. This is likely to help in drawing the conclusion that in Part Two also the IV affects positively the DV.

4.4 Discussing the Findings

The results are discussed with the aim of testing the hypotheses. The study hypothesizes that, readers whose prior knowledge about an informational text is activated prior to reading through text previewing, are likely to achieve better in reading comprehension tests than those who do not preview. The discussion of the findings will proceed in the same way we presented in the results. In other words, we will discuss first the results obtained in Part One of the experiment then we will move to those obtained in Part Two. As a final step, the results obtained in Part One and Part Two of the experiment are compared to state the final conclusion of the study.

4.4.1 Discussing the Findings of Part One

Table 8 shows that the experimental group; Gr2 members gain higher scores than those of the control one; Gr1. This difference is not clear unless we compare the means, the modes and the medians of the two groups. The comparison of these values exhibits a superior performance of the experimental group over the control one. In other words, the mean of the experimental group is found to be higher than that of the control one and the difference between them equals the value 2.7. Moreover, the mode of the experimental group which are the marks 9 and 10 is higher than the most frequent value in the control group which is the score 6. In addition, the median of the experimental group which is the value 9 is greater than that of the control one which is 6. This superiority is attributed to the superiority of the experimental members who received the experiment's treatment. The study seeks to confirm that activating readers' prior knowledge of an informational text through Text previewing will help in increasing readers reading achievements and through these first results our prediction seems to be realized.

The t-test, which was conducted on the results of Part One of the experiment, shows that the null hypotheses are not true and that the declarative hypotheses are correct. Since the comparison of the observed *t* and its critical value reveals that the first value is greater than the second one, we conclude that our results are significant. The difference between the observed *t* and the tabulated one is the value 4.6487-1.685 which equals 2.96. Thus, the results we obtained in Part One of the experiment are highly significant. The significance of the obtained results dictates that the study declarative hypotheses are correct. This conclusion establishes the cause-effect relationship between the two variables of the hypothesis. Therefore, prior knowledge activation of an informational text through text previewing is responsible for enhancing upper-intermediate learners' reading comprehension.

The reason behind the superior performance of the experimental group; Gr2 members in Part One of the experiment is that their prior knowledge about Text(1) is activated through text previewing before they start reading it. In other words, they are the group who received the treatment. They are also the group who better remember the text's content. Therefore, the experimental group, Gr2 members gain more chance to succeed in answering the multiple-choice exercise items. In contrast, the control group Gr1 members start directly reading the text without prior knowledge activation. They didn’t receive the treatment. Thus they have less chance to understand the text and to answer the ten multiple-choice questions.

Learners used their schemas the moment they started reading. These schemas varied between ideas and vocabulary items. This is due to prior knowledge activation through text previewing where readers pour out a considerable number of lexical items which form the text's sentences. These words are also met in the reading comprehension test (See appendix I). Moreover, some of the text's expressed meanings are stated on the board before the experimental members' eyes while previewing. Therefore, a considerable portion of the text is dealt with before the reading act starts causing readers to feel confident to read it. The moment they start reading, their focus falls on what is new with the aim of building connections between the old and the new information and this is likely to help in understanding the text. This is not the case with the control group members who need first to read the text to know about its ideas and its vocabulary. That is to say, the largest portion of the text is new for the control group and their focus falls on everything in the text. This, in fact, causes the readers' memory to be overloaded resulting in a low level of comprehension.

In Text (1) (See appendix I) the experimental subjects participated in their understanding by bringing to the surface a big portion of what they met once they read. The text talks about food and members of the experimental group succeeded to guess its topic. They talked about food and its importance to the body, its resources and the nutrients which our bodies need. Moreover, they remember what happens if there is a deficiency in one of the nutrients. In addition, the experimental group; Gr2 members poured out in some way the concept of the balanced diet and many words are introduced to learners before they start reading. This kind of term may not be known by all the experimental group subjects and the introduction of such terms increases learners' benefit. Therefore, text previewing helps readers in benefiting from each other background knowledge as it helps in gaining a portion of familiarity of topic and vocabulary, leading to determining the learners' focus while reading, thus, enhancing their reading comprehension.

4.4.2 Discussing the Findings of Part Two

Table 10 shows the scores of the experimental group; Gr1 and the control one; Gr2. From this table, we notice that the scores are different and that those of the experimental members seem to be higher than those of the control ones. This difference turns to be clear the moment the means, modes and medians of the two sets of the scores are compared. The mean of the experimental group; Gr1 is greater than that of the control one; Gr2 and the difference between the two means' values is the value 2.5. The value of the median and the mode of the experimental subjects'

scores is 9. For the control group, the value of the median is 5.5 and the mode is 5. Through making the comparison of these values, we notice that: 8.5>5 and 9>6. Therefore, the mean, the mode and the median of the experimental group; Gr1 are greater than those of the control one; Gr2. The comparison of these values shows that experimental subjects perform better than the control ones.

In an attempt to check the truth of our hypothesis, the t-test is also conducted on the results obtained in Part Two of the experiment. The value of the observed *t** 3.817 is greater than that of the tabulated *t* 1.686. The difference between the two values is 2.131. Thus, the results we obtained in Part Two of the experiment are highly significant. This significance leads us to confirm the validity of our hypothesis. That is to say, confirming that there is a cause-effect relationship between the IV (activating prior knowledge through text previewing) and the DV (reading comprehension).

Therefore, and through the t-test, we conclude that readers whose prior knowledge is activated through text previewing, score better in reading comprehension than those, whose already existing knowledge is not activated.

The text previewing procedures (See appendix III) help the experimental subjects in Part Two of the experiment to understand Text (2) better than the control ones. When previewing a text, the reader realizes that he knows in advance about the text which helps him in gaining confidence to read it. He will try to understand the new information through linking it to the old one existing in his schemata to attain at better comprehension.

Members of the experimental group; Gr1 used text previewing procedures before reading Text (2)(See appendix III), which helped them in scoring better in comprehension. The text is about the Planet Earth. The experimental group subjects provide some of the information they will meet while reading. Moreover, the previewing of Text (2) helped the experimental group members to be exposed to some of the text's lexical items. An example of this is the word " orbit" which is poured out by the learners prior to reading. Therefore, the experimental subjects' previewing prior to reading Text (2) activates their prior knowledge causing their reading comprehension to be superior. The control members, whose prior knowledge is not activated, show less comprehension of the text. This verifies our hypothesis. In other words, the manipulation of the IV (prior knowledge activation through text previewing) has a positive effect on the DV (reading comprehension).

4.4.3 Relating the Findings of Part One and Part Two

Part One and Part Two of the experiment differ in the text and the role played by the two groups: G1 and Gr2. In Part One, the subjects work on Text (1) and Gr1 serves as the control group and Gr2 plays the role of the experimental one. In Part Two, learners work on text (2) and the experiment's treatment shifts from Gr2 to Gr1. In other words, in Part Two, Gr1 which was the control group in Part One turns to be the experimental group and Gr2 which was the experimental group in Part One turns to be the control one in Part Two.

The scores of both groups in both parts of the experiment confirm the truth of our hypothesis. In Part One, members of the experimental group Gr2 scored better in reading comprehension than the control ones; Gr1 members.

The computation of the means of the two groups shows a primary superiority of the experimental subjects' performance in understanding Text (1) over that of the control members. Once the treatment shifts in Part Two of the experiment, performance superiority shifts with it. In other words, once group Gr1 turns to be the group which preview the text prior to reading, it turns to be the one which scores better in the reading comprehension. Whereas, the low performance in reading comprehension of Gr1 members in Part One of the experiment turns to be a high one in Part Two as the members of this group turn to be the ones to receive the experiment's treatment

Table 11: Gr1 and Gr2 Reading Achievements in Part One of the Experiment

	Part One	Reading achievement
Gr1	Control	Low
Gr2	Experimental	High

Table 12: Gr1 and Gr2 Reading Achievements in Part Two of the Experiment

	Part two	Reading achievement
Gr1	Experimental	High
Gr2	Control	Low

Table 11 and table 12 show that superiority of reading comprehension follows the experiment's treatment shift. In other words, the groups' members who preview the Text (1) or Text (2) are the ones who score better in the reading comprehension. That is to say, Gr2 (in Part One) and Gr1 (in Part Two); the groups which received the treatment, gain superior scores in reading comprehension. Therefore, the treatment of prior knowledge activation through text previewing is responsible for determining the groups' high or low performances in reading comprehension tests.

The t-test conducted on the results obtained in both parts of the experiment proves the truth of the declarative hypothesis. In Part One, the observed *t* which equals the value 4.648 is higher than the tabulated one which equals the value1.685 for 0.1 level of significance and 38 degrees of freedom. In Part Two, the observed *t** which equals the value 3.817 is also greater than the critical value of *t* for the same level of significance and the same number of the degrees of freedom. Therefore, both parts of the experiment's results are highly significant. This leads us to conclude that the declarative hypotheses are correct ones. The scores obtained by Gr1 members in Part One and Part Two of the experiment show that their reading comprehension is greater since they preview the text prior to reading it. Text (1) and Text (2) are of the same genre and the same level of difficulty but Gr1 members' comprehension of

Text (2) is higher than that of Text (1). The reason behind this is that Gr1 members preview text (2) to activate their prior knowledge and this helped them in understanding it. The following table shows Gr1 scores in Part One and Part Two of the experiment:

Table 13: Gr1 Scores in Part One and Part Two of the Experiment

	Gr1 Control	Gr1 Experimental
1	4	9
2	5	10
3	7	8
4	5	9
5	4	8
6	8	10
7	6	9
8	6	9
9	7	9
10	3	7
11	8	8
12	5	4
13	6	10
14	9	10
15	6	9
16	3	8
17	3	7
18	6	9
19	5	9
20	10	8

From table (13), we notice that 18 out of 20 students score better in reading comprehension once they activate their prior knowledge through text previewing prior to reading a text. The differences in the scores exceed from 1 to 5 points.1/20 student gains an equal mark with and without taking the treatment. 2/20 students score better when they do not receive the treatment than when they receive it. The reason behind the results of these three latter students may be attributed to their foreign language level of proficiency. Although 2 from 20 students performances in reading comprehension do not show the importance of prior knowledge activation prior to reading a text, a high percentage argues for its big value.

Table 15 and figure 8 make it quite clear that learners' success in comprehending a text is due to prior knowledge activation.

Table 14: The Rate of Gr1 Reading Comprehension Performance in Part One and Part Two of the Experiment

Performance	N	%
Superior	18	90
Equal	1	5
Inferior	1	5
Total	20	100

The scores obtained by Gr2 members in Part One and Part Two of the experiment show higher comprehension of Text (1) than Text (2). The reason behind this is the prior reading of Text (1), as Gr2 members activated their prior knowledge through text previewing which enhanced their comprehension of the text. In contrast, they read Text (2) directly without background knowledge activation caused low achievement in comprehending the text. The following table shows the difference in Gr2 members' achievements in reading comprehension once they receive and do not receive the treatment:

Table 15: Gr2 Scores in Part One and Part Two of the Experiment

	Gr2 Control	Gr2 Experimental
1	7	9
2	10	10
3	5	8
4	8	10
5	10	9
6	6	10
7	5	8
8	5	9
9	2	7
10	9	9
11	7	10
12	2	6
13	5	8
14	4	3
15	3	8
16	8	10
17	5	9
18	3	9
19	10	10
20	6	8

From Table 15, we notice that Gr2 members perform better in reading comprehension sine they activate their background knowledge prior to reading a text. 15/20 students of Gr2 members show that they benefited from prior knowledge activation through text previewing and that their reading comprehension is better than when they read the text without any introduction to it. The difference in their scores exceeds from 2 to 6 points. 3/20 student gained equal scores with and without prior knowledge activation. Only 2/20 students performed better in the reading comprehension test because they did not preview the text. The reason behind these five learners' performances in reading comprehension may be attributed to their foreign language level of proficiency. Therefore, the number of Gr2 members who benefit from prior knowledge activation exceeds the number of those who did not benefit. The next figure shows the rate of Gr2 members who succeed in comprehending when they activated their prior knowledge through text previewing.

Table 16: The Rate of Gr2 Reading Comprehension Performance in Part One and Part Two of the Experiment

Performance	N	%
Superior	15	75
Equal	3	15
Inferior	2	10
Total	20	100

4.4.4 Testing the Hypotheses of the Study

H_0: Previewing a text through THIEVES (which aims to activate learners' prior-knowledge) doesn't help the learners in comprehending a reading text.

H_1: Previewing a text through THEIVES (which aims to activate learners' prior-knowledge) help the learners in comprehending a reading text.

The Independent samples t test was used to test the effect of previewing a text through THIEVES on comprehending a reading text. As shown in Table (3) the results of Independent samples t test showed that the experimental group GROUP2 achieved a notable improvement in the test score after they have used the background knowledge activation

strategy THIEVES and this change was statistically significant at level (0.(t=4.648, p<0.001) and there is a significant increase in the mean score of the tests score after the treatment appears in the EXPERIMENTAL group1 (t= 3.817, p<0.001),. Therefore we reject the null hypothesis and accept the alternative hypothesis. So we can conclude that (Previewing a text through THEIVES (which aims to activate learners' prior-knowledge) helps the learners in comprehending a reading text.

5. Conclusion

Introduction: This section starts with a summary of the study, and then states the outcomes of the research. Next the pedagogical implications based on the findings are provided. The last section suggests some possible future research directions.

5.1 Summary

This study attempted to investigate the role of background knowledge activation through text previewing in enhancing reading comprehension among EFL learners.Two research questions were addressed:

(1) How does text previewing through THEIVES strategy (which aims to activate learners' prior-knowledge) help learners in comprehending a reading text?

(2) Is there any correlation between previewing a text through THEIVES as a pre-reading strategy (that aims to activate prior knowledge) and better comprehension of a reading text by learners?

5.2 Findings

Text previewing is found to benefit learners through THIEVES strategy. This strategy established a communicative mode of work which added to learners' motivation to read and understand the informational text. Testing the role of prior knowledge activation through text previewing in enhancing readers' comprehension of the informational text is found to be significant in both parts of the experiment. This leads us to derive the conclusion that text previewing is an effective strategy in activating learners' prior knowledge in reading an informational text which enhances their reading comprehension.

5.3 Pedagogical Implications

Stemming from the findings discussed before, a few implications for teaching English as a foreign language are suggested as follows:

The results of the study are of great value for language teachers, writers and program administrators.

- Firstly, concerning language teaching, the research revealed a significant role of background knowledge activation on reading comprehension; it is highly recommended that besides reading skills, vocabulary, and grammar, content teaching should be included in teaching reading to speakers of foreign languages. The benefits of text previewing are cognitive as well as emotional. In other words, prior knowledge through text previewing helps learners of English as a foreign language understand the informational text as it increases their engagement and make them confident that they know something about the topic before they begin reading.
- Secondly, while previewing a text, students come across new vocabulary, which is indispensible for understanding a text. We found that an important part of activating reader’s background knowledge is teaching the vocabulary related to it. Vocabulary items selected for pre-teaching should be specialized vocabulary which teachers predict will cause difficulties for most students, or words that carry concepts or relatively unfamiliar to most students.
- Thirdly, the study focused on another implication for writers as well. Since the purpose of writing is communication and the writer is not present to supply additional information the reader may need, writers – then - must have a profound knowledge of the subject matter that will be conveyed to readers and must decide what details the reader will need. So writers must intuitively assume the reader’s role.
- Finally, teacher trainers can use specific programs that train language teachers on the appropriate methods of activating students’ schema before reading texts. Foreign language teachers should be aware of the results of the studies on the crucial role of schema activation on reading comprehension.

5.4 Suggestions for Future Studies

For the replication of this work of research it is advisable to use several comprehension exercises. The multiple-choice format is not a sufficient means to insure accurate reflection of readers' comprehension. The combination of the multiple-choice exercises and the cloze procedure types of reading comprehension activities may be of more help. The cloze procedure is intended to cover readers' haphazard choice of the correct answers as it tests readers' accuracy in understanding the text's details. Success of THIEVES which is a prior knowledge activation strategy in enhancing learners' reading comprehension of the informational text paves the way for testing other prior knowledge activation strategies suiting other types of the text.

In this study, the superiority of providing background knowledge over previewing suggests that background knowledge is proved to be suitable for maximizing students' comprehension of documentary narrative. Further research should explore the differential effectiveness of previewing and providing background knowledge for specific text types (genres of expository or narrative nature or combination of two).

References

Ajideh, Parviz. (2006). Schema-theory Based Considerations on Pre-reading Activities in ESP Textbooks. Retrieved February 28th, 2008 from: http://www.asian-efl-journal.co

Alyousef, H. S. (2006). Teaching reading comprehension to ESL/EFL learners. *Journal of Language and Learning, 4*(1), 63-73.

Anderson, J. R., & Bower, G. H. (1973). *Human associative memory*. Washington, DC: V. H. Winston & Sons.

Anderson, R.C., & Pearson, P.D. (1984). A schema-theoretic view of basic processes in reading comprehension. In P.D. Pearson, R. Barr, M.L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (Vol. 1, pp. 255–291). New York: Longman.Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985).

Anderson, Neil J. (1999). *Exploring Second Language Reading: Issues and Strategies.* BOSTON: Heinle & Heinle Publishers.

Anderson, J. R. (1995). *Cognitive psychology and its implications* (4th ed.). New York: W. H. Freeman.

Balota, D. A., & Lorch, R. F. (1986). Depth of automatic spreading activation: Mediated priming effects in pronunciation but not in lexical decision. *Journal of Experimental Psychology: Learning, Memory, Cognition, 12*, 336-345. http://dx.doi.org/10.1037/0278-7393.12.3.336

Bensoussan, M. (1998). Schema Effects in EFL Reading Comprehension. *Journal of Research in Reading, 21*, 213-227. http://dx.doi.org/10.1111/1467-9817.00058

Brown, H.D. (2001). *Brown, H. D. " Teaching by principles," An interactive approach to language pedagogy*. White Plains, NY: Addison Wesley Longman, Inc, 2001

Campbell, J. R., Kelly, D. L., Mullis, I. V. S., Martin, M. O., & Sainsbury, M. (2001). *Framework and specifications for PIRLS Assessment 200*. Chestnut Hill, MA: Boston College.

Carrell, P.L., & Eisterhold, J.C. (1983). Schema theory and ESL reading pedagogy. *TESOL Quarterly, 17*, 553-569. http://dx.doi.org/10.2307/3586613

Collins, A., & Loftus, E. (1975). A spreading activation theory of semantic processing. *Psychological Review, 82*, 407-428. http://dx.doi.org/10.1037/0033-295X.82.6.407

Collins, A., & Quillian, M. (1969). Retrieval time from semantic memory. *Journal of Verbal Learning and Verbal Behavior, 8*, 240-248. http://dx.doi.org/10.1016/S0022-5371(69)80069-1

Cook, Guy (1997). “Key concepts in ELT: Schemas.” ELT Journal. 51, 1: 86.Dauzat, 1. & Dauzat, S.V. (1981). *Reading: the teacher and the learner*. New York.: WJ.!ey.

Dochy, F.J. R.C., & Alexander, P.A. (1995). Mapping prior knowledge: A framework for discussion among researchers. *European Journal of Psychology of Education, 1*0(3), 225-242. http://dx.doi.org/10.1007/BF03172918

Eskey, D.E. (2005). Reading in a second language. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 563-580), Mahwah, NJ: Lawrence Erlbaum.

Fisher, D., & Frey, N. (2009). B*ackground knowledge: The missing piece of the comprehension puzzle*. Portsmouth,

NH: Heinemann.

Harmer, J. (1991). *The Practice of English Language Teaching*. New York: Longman

Karakas, M. (2002). *The effects of reading activities on ELT trainee teachers' comprehension of short stories*.(Unpublished master's thesis). CanakkaleOnsekiz Mart University, Canakkale.

Langer. J. A. (1984). Examining background knowledge and text comprehension. *Reading Research Quarterly, 19*(4), 468-481. http://dx.doi.org/10.2307/747918

Manz, S.L. (2002). A strategy for previewing textbooks: Teaching readers to become THIEVES. *The Reading Teacher, 55*, 434–435. Retrieved from http://www.readwritethink.org/lesson_images/lesson112/manz.pdf

Ratcliff, R., & McKoon, G. (1981). Does activation really spread? *Psychological Review, 88*, 454-462. http://dx.doi.org/10.1037/0033-295X.88.5.454

Ringler, L. H., & Weber, C. K. (1984). *A language -thinking approach to reading*. San Diego: Harcourt Brace Jovanovich.

Rumelhart, D. (1980). Schemata: The building blocks of cognition. In: R. J. Spiro, B. C. Bruce & W. F. Brewer. (Eds.), *Theoretical issues in reading comprehension*. Hillsdale, NJ: Erlbaum.

Stevens, K.C. (1980). The effect of background knowledge on the reading comprehension of ninth graders. *Journal of Reading Behavior, 12*(2), 151-154.

Swales,' J. M. (1990). *Genre Analysis.* Cambridge: Cambridge University Press,

Stoller, F. (1994). Making the Most of a New Magazine Passage for Reading Skills Development. *English Teaching Forum, 32*(I), 2-7.

William F. Brewer & Glenn V, Nakamura. (1984). Technical Report No. 325THE NATURE AND FUNCTIONS OF SCHEMAS University of Illinois at Urbana-Champaign September 1984

Yin, K. M. (1985). The Role of Prior Knowledge in Reading Comprehension. *Reading in a Foreign Language, 11*, 375-380.

Yule, G. (2000). *Pragmatics*. Oxford: Oxford University Press.

Appendix I

Material One

Healthy Eating

A Balanced Diet

To grow, to be healthy and to stay alive, everyone needs to eat. However, we cannot eat only one kind of food. We need a mixture of different food to keep us healthy and to give us energy. The correct mixture of food is called a balanced diet.

What kind of food do we need for a balanced diet?

Our bodies need food which gives us five special substances. These substances (called nutrients) are **proteins, carbohydrates, fats, minerals** and **vitamins. Proteins** are needed by our bodies to grow and become stronger. Lean meat, fish, chicken, milk, cheese, and eggs are examples of food containing a lot of proteins. **Carbohydrates** supply most of our bodies' energy. Carbohydrates are found in potatoes, bread, cereals (rice, wheat, corn, etc.) and sugar. **Fats** also supply our bodies with energy. Fats come from cheese, butter, oil and meat. **Minerals** in our diet strengthen our bones and teeth. We get a lot of minerals from milk, lean meat, green vegetables and cereals. **Vitamins** are needed to keep our bodies working well. If you eat enough protein, carbohydrates, fats and minerals, plus fresh fruit and vegetables, then you will also get all the vitamins you need.

What will happen if we do not have enough of these substances in our diet?

There are diseases which are called deficiency diseases. These are caused by not getting enough of one or another kind of food. For example, a protein deficiency will have a bad effect on our muscles, skin and hair. If we do not get enough carbohydrates and fats, we will not have the energy which our bodies need to move, grow, repair themselves and keep warm.

Minerals are very important in our diet. The quantity of any one mineral in our bodies is small. However, if we do not get that small amount, we will become sick. One important mineral for strengthening our bones and teeth is calcium. Milk supplies a lot of calcium.

Another important mineral is iron. Iron is needed for our blood. We get iron from meat and from some plants.

Vitamins, too, are only needed in small quantities. However, they are also important. Hundreds of years ago, sailors often became sick with a disease called *scurvy*. It made them weak and their teeth fell out. It was caused by a deficiency of vitamin C. Vitamin C is found in oranges, lemons and limes. Fresh fruit was not part of the sailor's diet. As soon as they began to drink lime juice, their scurvy disappeared.

Is there any food which gives us everything which we need?

Yes. Several kinds of food give us all or most of, the nutrients which we need. It may surprise you to learn that two kinds of food from the traditional Arabian diet - dates and camel's milk - are full of nutrients.

It's surprising how many nutrients dates contain!

Modern science has proved that dates contain a lot of vitamins as well as sugar, fat and protein. They are also rich in the minerals calcium, sulphur, iron, potassium, phosphorus, copper and magnesium. Scientists say that a person who lives on a diet of only dates and milk will be completely healthy and will have no deficiency diseases.

THE NUTRITIONAL VALUE OF CAMELS' MILK

Camels' milk is available in several ways. It can be stored at high temperatures for several days without going bad and it is very high in minerals. Science has shown that one glass of camels' milk supplies all the nutrients of a complete meal. Moreover, a camel can produce up to 25 litres of milk per day.

Now choose the correct answer.

1. Having a balanced diet means eating . . .

a. the same amount of every food. **b. only fruit and vegetables.**

c. a correct mixture of food. **d. three meals every day**.

2. A nutrient is . . .

a. a special kind of vegetable. **b. a special kind of meat.**

c. a substance we need in our food. **d. a special kind of junk food.**

3. Vitamins are a kind of . . .

a. nutrients. **b. vegetables.**

c. diseases. **d. fruit.**

4. Cheese contains mostly . . .

a. carbohydrates. **b. magnesium.**

c. sugar. **d. proteins and fats.**

5. Lean meat contains . . .

a. only one nutrient. **b. more than one nutrient.**

c. all the nutrients. **d. no nutrients.**

6. Which nutrients are good for your bones and teeth?

a. carbohydrates **b. Fats**

c. Minerals **d. proteins**

7. Which nutrients give you energy?

a. fats and carbohydrates **b. proteins and vitamins**

c. minerals and vitamins **d. proteins and fats**

8. Which of these is not a mineral?

a. iron **b. vitamin C**

c. calcium **d. copper**

9. A deficiency in your diet can result from eating . . .

a. only one kind of food. **b. only healthy food.**

c. too much food. **d. many kinds of food.**

10. Hundreds of years ago, sailors became sick with scurvy because . . .

a. their teeth fell out. **b. they did not eat enough fats.**

c. they needed more calcium. **d. they had no fresh fruit in their diets**.

Appendix II

Material TWO

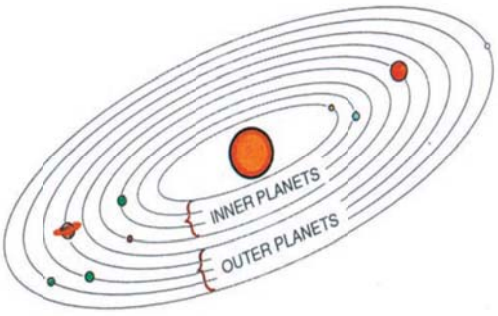
THE PLANET EARTH

Earth's place in space

The sun has nine planets. The four planets that are nearest to it have solid surfaces. Earth is the third of these inner planets. Most of the outer planets are balls of gases. So their surfaces are not solid.

Some Statistics

Earth is about twice as big as Mars. Its diameter is around 12,700 kilometres. There are approximately 365 days in a year on Earth. That is the time it takes to make a complete orbit of the sun. There are 24 hours in a day. This is the time it takes to spin once around its own axis.



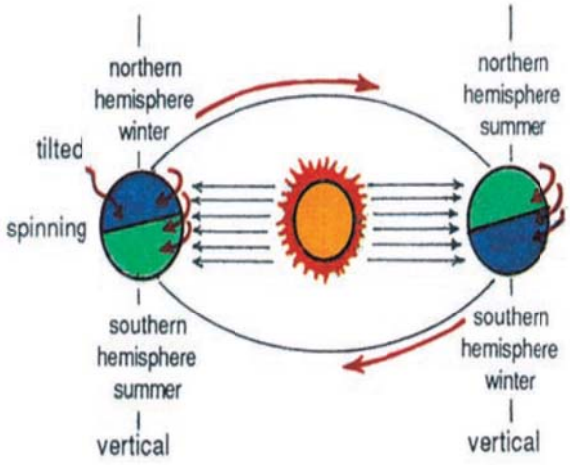
The Atmosphere

Earth has an atmosphere around it. Its gases consist of about 78% nitrogen and 21% oxygen. Some of the other planets have atmosphere. However, their gases are not the same as Earth's. They do not contain water vapour, either.

Compared with the size of the Earth, the atmosphere is as thin as an apple skin.

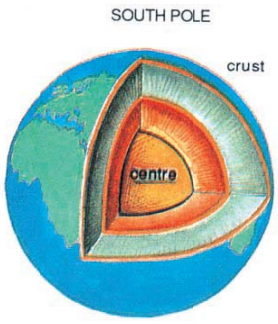
The seasons

The Earth's axis is not vertical. It is tilted at an angle of about 23o. As it goes round the sun, different parts become closer to it. For this reason the Earth has seasons. Summer is in the hemisphere that is nearer to the sun. Winter is in the one that is further away. Spring and autumn occur between these times. The average temperature on Earth is 12 OC.

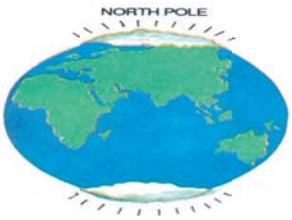


Inside Earth

The Earth's hard surface looks stationary but it is not. It moves very slowly because the inside of the Earth is very hot. This surface, sometimes called the Earth's crust, lies on rock. But the heat from the centre of the Earth sometimes melts this rock. Thus the crust floats on liquid rock.



On Earth's surface, water is found in two more forms. As solid ice, it is found mostly near the North Pole and South Pole. Elsewhere, it is liquid. In rain, streams, rivers and most lakes it is fresh water. In the sea, it is salt water.



Life on Earth

Earth is unique. It is the only known planet that has got life on it. Life cannot exist on any of the other planets in our Solar System. Their atmospheres, temperatures or lack or water make life impossible. This is why we must care for our planet. It is the only place where we can live.

Now answer these questions:-

1- How many planets does the sun have?

a) seven **b) eleven** **c) nine** **d) ten**

2- Earth's axis is ..... ?

a) vertical **b) slanted** **c) horizontal** **d) curved**

3- The time a planet takes to spin around its own axis is called……

a) a day **b) a week** **c) a month** **d) a year**

4- The average temperature on earth is……

a**) 65˚ c** **b) 23˚ c** **c) 12˚ c** **d) 365˚ c**

5- The time a planet takes to orbit its star is called……

a) a day **b) a week** **c) a month** **d) a year**

6- Mars is ..... Earth.

a) as big as **b) twice as big as**

c) about half the size of **d) three times as big as**

7- Earth has seasons because …….. .

a- it is near the sun . **b- it is far from the sun**

c- Its axis is tilted **d- it is the only which has oxygen and water** .

8- Earth is a unique planet because ……. .

a- it is in the solar system **b- it is far from the sun**

c- its axis is tilted **d- it has oxygen and water .**

9- Earth's crust ……. .

a- is stable **b- moves** **c- is liquid** **d- lies on water**

10- The passage says that .....

a- life exists on other planets **b- life doesn't exist anywhere else.**

c- life exists everywhere in the universe **d- life may exist on other galaxies.**

Appendix III

The Elements of THIEVES

Name: _____

Title ----------

What is the title?

What do you already know about this topic?

What does this topic have to do with the preceding text?

Does the title express a point of view?

What do you think you will be reading about?

Headings

What does this heading tell you, you will be reading about?

What is the topic of the paragraph beneath it?

How can you turn this heading into a question that is likely to be answered in the text?

Introduction : Is there an opening paragraph, perhaps italicized?

Does the first paragraph introduce the text?

What does the introduction tell you, you will be reading about?

Do I know anything about this topic already?

Every first sentence in a paragraph

What do you think this text is going to be about based on the first sentence in each paragraph?

Visuals and vocabulary

Does the text include photographs, drawings, maps, charts, or graphs?

What can you learn from the visuals with the text?

How do captions help you better understand the meaning?

Is there a list of key vocabulary terms and definitions?

Are there important words in boldface type throughout the text?

Do you know what the boldfaced words mean?

Can you tell the meaning of the boldfaced words from the sentences in which they are embedded?

End-of-text questions :

What do the questions ask? What information do they earmark as important?

What information do I learn from the questions? Keep in mind the end-of-text questions so that you may annotate the text where pertinent information is located.

Summary: What do I understand and recall about the topics covered in the summary?

(Modified from Read, Write & Think - Ministry of Education -KSA)