An-Najah National University
Faculty of Graduate Studies

Integrating Higher Order Thinking Skills(HOTS)On The Tenth Graders To Improve Learners' Achievement In Reading Comprehension In Jenin District

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Dedication

To my family, my husband(Ziyad) and my children (Tariq, Lana Ameed, Sally, Aseel, Qutaiba and Leen) for their continuous support and love.

To my parents and sisters for their encouragement.

To my relatives and friends, and to my teachers without whose help this work wouldn't have been completed.

Special dedication is to my school-Turkish Secondary Girls' School-and its staff.

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الإقرار

أنا الموقعة أدناه, مقدمة الرسالة التي تحمل العنوان:

Integrating Higher Order Thinking Skills(HOTS)On The Tenth Graders To Improve Learners' Achievement In Reading Comprehension In Jenin District

دمج إستراتيجية مهارات التفكير العليا على مستوى الاستيعاب القرائي لدى طلبة الصف العاشر الأساسي في مدارس محافظة جنين

أقر بأن ما اشتملت عليه هذه الرسالة إنما هو نتاج جهدي الخاص, باستثناء ما تمت الإشارة إليه حيثما ورد, و أن هذه الرسالة ككل, أو أي جزء منها لم يقدم من قبل لنيل أي درجة أو لقب علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name: **اسم الطالبة:**

Signature: **التوقيع:**

Date: **التاريخ:**

Tables of Contents

List of Tables

List of Figures

List of Appendices

Integrating Higher Order Thinking Skills(HOTS)On The Tenth Graders To Improve Learners' Achievement In Reading Comprehension In Jenin District

By
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Abstract

Integrating Higher Order Thinking Skills(HOTS)On Tenth Graders To Improve Learners' Achievement In Reading Comprehension In Jenin District.

Reading skill has not been given due care by the teachers of English language in the classrooms so students are no more lifelong readers. As a result,teachers should be aware of the strategies that they can follow when they start reading in order for the reading process to be fruitful. One of the reading strategies that can help students comprehend what they read is higher order thinking strategies. The researcher conducted this study to investigate the effect of using higher order thinking strategies on the students' reading comprehension. Therefore, the researcher conducted her research to answer the following questions:

1. Are there any significant differences at (a=0.05) in the students' achievement between first and second applications for the (inferring, questioning and summarizing) group?

2. Are there any significant differences at (a=0.05) in the students' achievement between first and second applications for the control group?

3. Are there any significant differences at (a=0.05)in the students' achievement on the first application due to gender?

To achieve the study objectives, the researcher selected an appropriate reading passage and constructed a reading comprehension achievement test after reviewing several studies and adopted positive points of them.

Each experimental group was taught according to one of the three higher order thinking skills (HOTS) (inferring, questioning and summarizing) while the control group was taught without using any of these skills. Afterwards, students in all groups were asked to answer the questions of the reading achievement test. The results were analyzed using two way analysis of variance, paired test, and Shafe Post-Hoc test.

The findings of the study indicated significant differences in favor of the experimental groups taught using the (HOTS) strategies. The findings also revealed significant differences in the reading achievement test scores attributed to sex and no significant differences attributed to the interaction of sex with strategy.

In the light of the findings, the researcher recommended that teachers should give more attention to the (HOTS) strategies. She also recommended further research to investigate the effects of other (HOTS) strategies.

Chapter One
Introduction and Background

Reading is a basic language skill that any learner needs. Unfortunately, how to teach reading has not been given due care in our schools. In the past, according to the traditional view, reading begins with the child's mastering the names of the letters, then mastering the letter-sound relationships, then learning some easy words in isolation, and finally reading simple stories with highly controlled vocabularies. Researchers and teachers, as well, complain that most learners are not able to understand what they read. Harp and Brewer (1996).

The teacher's notion of reading is very important to determine the most suitable strategies and methods to read effectively; it can also help in the way teachers tend to teach reading texts. In the past, teachers used to present the reading passage in the textbook and ask students to read either silently or loudly, and then students had to answer the questions that follow. Students, naturally, had no choice but to read even if they had not technical ways of how to read. What reinforced this perception of not having any interest were the teachers' traditional techniques, the strategy in which the teacher presents the new vocabulary items first, and then he asks them to read the reading passage silently. After that, they answer the questions that follow for teaching reading comprehension. Grills (2008).

The result is that students are not encouraged to read, they only read the required textbook in order to be able to sit for the achievement routine exams. In such a case, students lacked motivation, even if they read, they

show negative attitudes. For most of the learners, reading is an extremely difficult task that requires an integrated time and accumulation of experience.

It is widely believed, however, that teaching reading is more difficult than writing. Hence, to read effectively, the learner should be able to use two competencies namely: the linguistic and rhetorical. The latter is concerned with the style-system in the cultural patterns of language. Unfortunately, having controlled the linguistic competence, the learner is not expected to read effectively or meaningfully. Sanders (2001). Therefore, students should be taught how to read in order to be effective readers. Learning reading comprehension requires a strategy which lesson plans progressively develops and reinforce reading comprehension skills, but a student does not seem to really get it by reading; this means that the student is successfully decoding words, but decoding without reading comprehension will not get him further .

So, what is Reading Comprehension? Reading comprehension skills separates the "passive" unskilled reader from the "active" readers. Skilled readers do not just read, but they interact with the text. Skilled readers, for instance, predict what will happen next in a story using clues presented in text, create questions about the main idea, the message, or the plot of the text, and monitor understanding of the sequence, context, or characters. Sanders (2001).

All teachers want their students to read effectively, but not all agree on the best ways to teach reading. Effective reading requires not only accurate reading skills, but also being able to comprehend easily and automatically Raymond (2006).

Many students who struggle to learn how to read are able, with appropriate instruction, to compensate for initial reading problems by becoming accurate decoders, but fail to reach a level of sufficient fluency to become fast and efficient readers. Adams (1990).

Reading as a major skill was ignored by pedagogues and researchers for a long period of time. Most of the focus was placed on oral skills (listening and speaking). For example, the Audio Lingual Method which was developed in the United states during world war II, emphasized the oral skills, ignoring reading and considering it as a passive skill which was given no emphasis at all. Fry (1997).

When the Audio Lingual Method failed in fulfilling its mission, other teaching methods were devised and put to use. The cognitive method in (USA) and the Communicative Approach in Britain came into being during the late 1960s. Equal attention has been given to the four skills together (listening, speaking, reading and writing). Pedagogues and researchers started to put more emphasis on reading comprehension as a major skill for students of English all over the world. Trelease (1989).

Ward (1980), McDonough and Show (1994) argued that reading is the most important and fruitful foreign language skill to teach.

Al-Mutawa and Kailani (1996) also considered reading as a window through which foreign / second language learners could see other cultures and gain more specific knowledge. Furthermore, Kim and Krashen (1997) considered reading as a powerful means for developing second language competence. Kaddoumi (1995) also indicated that a reading knowledge of a foreign language is often important to academic studies, professional success and personal development. Through his long experience in teaching English, the researcher believes that there is a general dissatisfaction among parents, school teachers, and university instructors from the low level of reading comprehension achievement of Palestinian students in reading English texts.

According to Grabe (1991) research on reading in a second language and efforts to improve second language reading instruction have grown remarkably in the first quarter of the last century. So, there have recently been many influential theories about how children should be taught how to read.

Some of these theories have been reflected on a number of methods of teaching reading comprehension to show the importance of reading comprehension. Allen and Valet (1977) pointed out that for many students, reading is the skill that they may occasionally use when they have left the classroom . It is also the skill that is retained the longest.

Different views have been expressed toward the meaning or the nature of reading. Robinson and Good (1987p.9) said, "No definition of

reading can possibly include all viewpoints and features because each person's definition reflects what reading means to that person."

Generally speaking, most writers defined reading "as getting meaning encoded by the writer from the text. It is an interactive skill in which the reader interacts with the text and employs his experience and previous knowledge to get meaning."

Brumfit (1980p.7) defined reading as "an extremely complex activity involving a combination of perceptual, linguistic and cognitive abilities," Williams (1984p.12) described reading as a process of obtaining meaning from the text.

Mayer (2003p.26) referred to reading comprehension as a "technique for improving students' success in extracting useful knowledge from text."

Grellet (1981p.3) looked at reading as "understanding a written text through extracting the required information from it as efficiently as possible."

As a result of challenges and developments in the fields of Linguistics and Education, the Palestinian Ministry of Education introduced a new English series called English for Palestine late 1990's which focus on the communicative approach that give emphasis and attention to all four skills together especially reading comprehension skill. So, this skill is given emphasis and attention in both Basic and Secondary curricula in Palestine.

By the end of the Basic stage, pupils are expected to be able to "read and understand English texts of a general nature."(The main aim of teaching reading for the Secondary Stage is also to enable students to" read and understand authentic written English texts having to be with general and technical topics. "(Ministry of Education, 1997).

In spite of such an emphasis on the reading comprehension skill, many teachers of English in Palestine have always complained that their students are slow readers and poor in comprehension. They argue that their students lack the ability to comprehend their reading text book or even to answer the factual questions. Teachers have also complained that they spend much time on reading comprehension lesson.

The ability to think is one of the most crucial survival skills in today's world. Lacking such skill, learners do not participate effectively in an open society or in their education. (Toulmin, 1979; Sacco, 1987). Learning only begins when teachers challenge students with real questions that demand solutions Moller (2005), HOTS strategies (inferring, questioning and summarizing) are the best observed when students realise the value in it, and are self-motivated.

Reading comprehension has been a major issue in all schools for more than 20 years. Researchers have found that teaching reading strategies is important to developing increased student comprehension. At the same time, they have found many teachers who lack a solid foundation for

teaching these reading comprehension strategies. (National Reading Panel, 2005).

Therefore, teachers need to be prepared, through professional development, on how to design effective comprehension strategies and how to teach these strategies to their students. Improving the reading skills is a top priority for all educators.

The area of focus for this research is improving reading comprehension through the use of higher-order thinking strategies (HOTS) (inferring, questioning and summarizing). Without a solid foundation of reading skills the researcher feels learners will struggle throughout their schooling and life.

Reading comprehension is the thinking process used to make meaning of what a person reads. Pressley (2000). Teachers spend very little time teaching comprehension strategies. Instead, they focus on asking literal questions, assigning workbook pages, and giving directions. Block and Israel, (2005).

Good readers use higher-order thinking strategies to think about, and control their reading before, during, and after reading a selection. Students who don't use (HOTS) are usually low achievers in reading .Marier(2000). Despite many factors that influence reading comprehension, the researcher in this research focused on three strategies of (HOTS) (inferring, questioning and summarizing).

(HOTS) Strategies

Questioning: is a process reader's use before, during and after reading. The questioning process requires readers to ask questions to achieve a full understanding teacher, learners, to construct meaning, enhance understanding, find answers, solve problems, find information and discover new information. Teachers need to ask students questions during and after reading a passage. Students are asked to return to the text to find the answer to questions. The teachers' model and the students practice to discriminate between questions that are literal, inferential, or based on the readers' prior knowledge. Children are taught to generate questions during reading and evaluate whether the questions are literal, inferential, or based on prior knowledge. By using the student generated questioning strategy, text segments are integrated and thereby improve reading comprehension. Oczkus(2003p.24-34).

Inferring: refers to reading between the lines. Students need to use their own knowledge along with information from the text to draw their own conclusion (Serafini, 2004). Through inferring, students will be able to draw conclusions, make predictions identify underlying themes, use information to create meaning from the text, and use pictures to create meaning. Harvey & Goudvis (2000p.33-40). Students can be taught to use illustrations, graphs, and titles from the text to make inferences.

Summarizing: the process of summarization requires the reader to determine what is important while reading and to paraphrase the

information in the readers own words. Alder (2001). Teacher modeling and student practice of the summarization process has proven effective for improving students' ability to summarize text and to improve text comprehension. Students can be taught to identify main ideas, connect the main ideas, eliminate redundant and unnecessary information, and remember what they read with the summarization strategy.

Statement of the problems

Most Palestinian students do not know how to read meaningfully. They only read the textbook required to be able to perform well in the achievement tests. Students are reluctant to read English texts other than their school textbooks.

In spite of this, most of them get low marks in reading comprehension exercises. The problem may be due to the way they use to follow while reading. They read the text as if it consists of discrete elements. Students do not interact with the passage they read, nor they build relationships between the terms in the text to build up the meaning, and then to lead themselves toward reading comprehension. Students are not aware of the strategies that may help them in reading, because they are not taught to do so nor are they immersed in reading activities that employ such strategies.

The main concern of this study is to determine the effect of Higher Order Thinking Skills reading strategy on the students' reading

comprehension, and to teach students how to use this strategy in reading comprehension to improve their achievement.

Learning English as a foreign language is, undoublty, a complex and difficult process. However, experience of the English teachers show, that most students of the 10th grade are poor readers despite their having studied previously English for 9 years.

The researcher witnessed that Palestinian learners are brought up in a way that their study directs them only to be followers. They are not creative thinkers, since it is assumed that thinking skills are acquired naturally as a collateral effect of traditional instructional process, thinking skills development is an often –neglected activity in curriculum design.

In classroom, learning occurs when learners effectively use the ideas, principles and theories of the content, which are relevant to their life. In addition, it is of great help to prepare them to succeed in their future. All these things are feasible through Higher Order Thinking Skills (HOTS) (inferring, questioning and summarizing), which can be applied during and after reading. Students should be aware of the relationship between (HOTS) and reading comprehension everything they encounter.

Students' obstacles in reading comprehension may be partially attributed to non-linguistic factors such as lack of motivation and interest. The researcher indicated that a teacher who starts the reading lesson by asking his students to read the passage on page so and so and then to

answer the questions is hardly likely to motivate them. But a teacher who starts his reading lesson by giving his students a reason to read and providing them with some preparation can certainly arouse their interest in the topic.

Purpose of the Study

The present study aims at investigating the integration of HOTS at the Tenth Graders to improve learners' achievement in reading comprehension in English language in Jenin District .

The objectives of this study are the following:

* To find out the effects of using (HOTS) on the tenth graders to improve learners' achievement in reading comprehension.

* To find out which of the three strategies of (HOTS) (inferring, questioning and summarizing) is the most effective in improving reading comprehension?

* To investigate the influence of the learners' proficiency and gender on their use of (HOTS) in the reading comprehension.

* To provide recommendations which may contribute to the improvement of teaching comprehension through the implementation of higher order thinking strategies.

Questions of the study

There are many questions to be answered through this study:

1. Do higher order thinking strategies (HOTS) have positive effects on helping learners to comprehend reading comprehension passages?

2. Is there any significant relationship between reading comprehension and higher order thinking strategies (HOTS)?

3. Can the implementation of (HOTS) result in a better performance on reading comprehension?

4. Are there any significant differences at (a=0.05) in the students' achievement between first and second applications for the (inferring, questioning and summarizing) groups?

5. Are there any significant differences at (a=0.05) in the students' achievement between first and second applications for the control group?

6. Are there any significant differences at (a=0.05) in the students' achievement on the first application due to gender?

7. Are there any significant differences at (a=0.05) in the students' achievement on the second application due to gender?

Hypotheses of the study

Investigating the effects of adopting higher order thinking strategies (HOTS) (questioning, inferring and summarizing) in reading comprehension on the learners' achievement of the 10th graders is the main target of the study.

As a mean of structuring the problem, the researcher attempts to test the following null hypotheses:

Ho1: Higher order thinking skill (HOTS) has no significant effect in helping Palestinian ELF learners to comprehend reading comprehension passages.

Ho2: There is no relationship between reading comprehension and higher order thinking skills (HOTS).

Ho3: Higher order thinking skills may not result in a better performance on reading comprehension.

Ho4: There are no significant differences at (a=0.05) in the learners' achievement between first and second applications for the (inferring, summarizing, and questioning) group.

Ho5: There are no significant differences at (a=0.05) in the learners' achievement on the first application due to gender.

Ho6: There are no significant differences at (a=0.05) in the learners' achievement on the second application due to gender.

Significance of the Study

The significance of this study lies in its being the first one which deals with (HOTS) strategies in reading comprehension in Palestine. (1)May provide insight for both teachers and learners on the relationship between HOTS and improving reading comprehension. (2) Increase the teacher's awareness of the influence of HOTS through training them on the use of (HOTS) strategies in demonstrate language teaching reading.(3) It is hoped that this study confirms that (HOTS) and reading comprehension are interrelated. (4) To add more information on the effect or impact of (HOTS) on the achievement at reading comprehension and on their attitudes toward learners' reading.

In other words, the significance of this study emerges from the fact that teachers as well as learners are indeed in need of having this classroom practice investigated in second language teaching situations. Such investigations will help both teachers and learners to overcome an important challenge hardship in the teaching and learning of reading comprehension.

So ,with a better understanding of the nature of the reading process, of reading strategies and of what a reading skill program should include, language teachers will be able to choose materials and activities that capitalize on their students interests. Such a study may provide the teachers with insights into their behavior in the classroom.

Definition of Terms

10th graders: refers to students in final year in the upper primary stage, where students' their age at 15_16 (Ansary, 2002).

Foreign language: it is a term which is used for situations in which Learners learn a language that is neither their mother tongue nor as medium in the place where they live (Aharony, 2006).

Learning: a conscious process, which results only in knowing about the language.

Higher order thinking strategies (HOTS): involves the transformation of information and ideas. This transformation occurs when students combine facts and ideas and synthesize, generalize, explain, or arrive of some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems, gain understanding and discover new meaning. (Tomei, 2005).

Achievement: Accomplishment or proficiency of performance in a given skill or body of knowledge (Good-Dictionary of Education, p.7).

Control group: A group of students taught a reading passage without using any higher order thinking skills (HOTS) to help them make inferences about the topic.

Metacognition: is an awareness of and knowledge about strategies for planning, monitoring, and controlling one's own learning. (Brown, 1980).

Comprehension: This term is defined as the construction of meaning using both the decoded language and prior knowledge (Lunda, 1991).

Reading comprehension: Reading comprehension is not just understanding words, sentences or even texts, but involves a complex integration of the reader prior knowledge, language proficiency and metacognitive strategies (Paran, 1996).

Limitations of the Study

The researcher classifies the limitations of the study into four categories including: locative, temporal, human and topical limitations.

1. Locative limitation: The study covers only the public secondary schools in Jenin Governorate.

2. Temporal limitation: The researcher carried out this study in the Scholastic year 2009\2010.

3. Human limitation: The sample consisted of the male and female students at the public secondary schools in Jenin Governorate.

4. Topical limitation: The study was conducted to examine the impact of (HOTS) strategies on learners' reading comprehension achievement in public schools in Jenin Governorate.

Summary

The researcher in the first chapter explicitly presents the problem of her study which aims at investigating the integration of the three strategies of higher order thinking skills (HOTS) (inferring, questioning and summarizing) on the Tenth Graders to improve learners' achievement in reading comprehension.

Furthermore, this chapter is designed to present the statement of the problem, research questions, hypotheses, significance of the study, definition of terms and limitations of the study.

Chapter Two
Review of Related Literature

Introduction

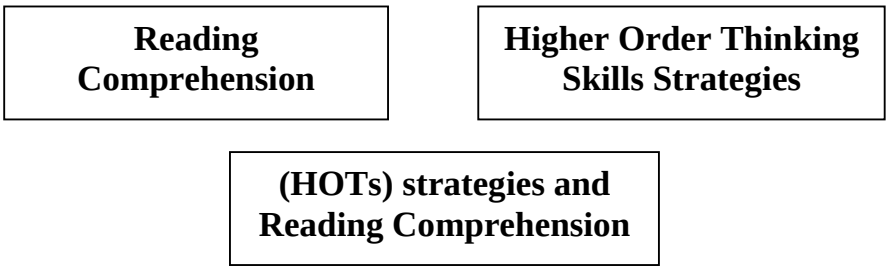
Issues and debates surrounding the use of the (HOTs) strategies as effective mean towards improving learners' reading comprehension skills and developing positive attitudes towards reading have recently emerged in our schools. So, the researcher in this chapter presents the most recent views to this method of instruction.

Several writers have written about the importance of (HOTS) strategies and its influence on arousing students' interest in the reading comprehension and increasing the required achievement test. But as mentioned in chapter one, and to the researcher's best knowledge, no Palestinian studies have been conducted to investigate the effects of (HOTs) strategies on student's reading comprehension. However, several studies have been conducted at the international level related to integrating (HOTs) strategies on students reading comprehension.

For the sake of facilitation and organization, the researcher divided the material into three main sections:

- What is reading comprehension?
- What is Higher Order Thinking Strategies (HOTs)?
- Combination of reading comprehension and (HOTs) strategies.

The developmental framework of the literature review is shown in:



Theoretically, the researcher will attempt to shed light on the meaning of higher order thinking skills, in addition to the meaning of reading comprehension, how can students' reading comprehension be increased by using this strategy, and the shared role between teachers and students in using this strategy.

At the practical level, the study summaries the results of relevant research studies. So, the study helps to direct the attention of English language teachers in general and the English language teachers of the basic stage in particular to the significant role of the HOTS strategies in teaching reading in the English textbooks, particularly , English for Palestine texts books , and perceive how students interact effectively with this strategy.

What is Reading Comprehension?

Different views have been expressed toward the meaning or the nature of reading.

The term reading comprehension is rather broad and encompasses multiple meanings. The following definitions were chosen to represent the term of purposes of this literature.

Robinson and Good (1987 p.13) indicated: "no definition of reading comprehension can possibly include all viewpoints and features because each person's definition reflects what reading comprehension means to that person." Generally speaking, most writers defined reading as getting meaning encoded by the writer from the text. It is an interactive skill in which the reader interacts with the text, and employees his experience and previous knowledge to get meaning.

According to Salinger (2005): reading comprehension is not just understanding words, sentences, or even texts, but involves a complex integration of the reader prior knowledge language proficiency and metacognitive strategies .

Grellet (1981) cited in Paran (1996) considered reading comprehension as an activity involving constant guesses that are later rejected or confirmed. Athey (1993) stated that reading comprehension is an activity that involves extracting meaning from print and assimilating that meaning to one's stored of information.

As defined by partnership for reading (2005), reading comprehension is understanding a text that is being read, or the process of "constructing meaning" from a text. Comprehension is a "construction process" because it involves all the elements of the reading process working together as a text is read to create a representation of the text in the reader's mind. In this study, it means that to what extent students

comprehend the interrelationships between the ideas presented in the reading comprehension texts by (HOTS).

Sanders (2001p.24) Reading comprehension skills separate the "passive" unskilled reader from the "active" readers. Skilled readers do not just read, they interact with the text. Skilled readers, for instance, predict, infer, analyze what happens in a story or a text using clues presented in text to create questions about the main idea, message, or plot of the text, monitor understanding of the sequence, context, or characters.

Nuttal (2005) argues that reading comprehension is a kind of reading in which readers besides linguistic knowledge should understand semantic details and pay close attention to the text. The aim is to arrive at an understanding, not only of what the text means, but of how the meaning is produced.

Snowling (2004) states that reading comprehension is the process of extracting and constructing meaning through interaction and involvement with written language.

According to Perffetti (1985p.44) reading comprehension is "thinking guided by print".

Reading comprehension: is defined as a complex interactive process that begins with identifying words by using knowledge outside the text accessing word meaning context, recognizing grammatical structures,

drawing inferences, and self – monitoring to ensure that the text is making sense (Sousa, 2005, p. 97).

Celce – Murica (1991) perceives reading comprehension as an interaction of the text information in combination with the information and expectations that the reader already has. The National Reading Panel Report (2000) borrows its definition of reading comprehension from Durkin (1993) who wrote that it is "intentional thinking during which meaning constructed through interactions between text and readers". (p.45).

Comprehension, a part of lower order thinking skills, is integral to higher order thinking skills. In fact, some research and teaching strategies focus on comprehension as if it were within the higher order thinking domain. Allen (2002).Reading comprehension remains the process by which individuals construct meaning from information and from new "schemata" through specific activities Beck & Mckeown (2001) including:

- Generating and answering questions that demand higher order thinking about old and new ideas.
- Exploring and making discoveries.
- Summarizing and discussing.
- Relating new understanding to other concepts.
- Applying new ideas and information in basic – problem – solving activities.

- Verbalizing about cognitive processes involved in comprehension.

Reading comprehension has been defined in many ways over the years. Anderson (2006) state that the idea of reading comprehension has changed and moved from what was considered a receptive process to what is now an interactive process.

According to Block, et.al (2008p.44) "reading comprehension represents the readers' ability to integrate effectively and meaningfully applied acquired knowledge with the information provided in the text". This kind of skill is integration between thinking and the acquired information.

One of the goals of educators should be not only build a knowledge base but also enable students to build critical thinking skills to apply this knowledge to new and unique experiences. The ability to think critically will benefit the students long after they have left the classroom. Mckown & Bornett (2007).

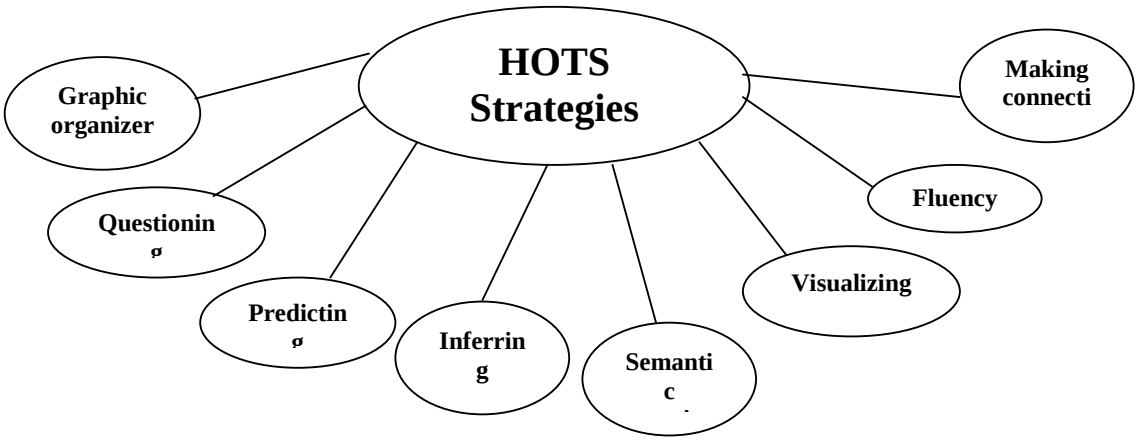
What are Higher Order Thinking Skills Strategies?

There are a number of conceptualizations of higher order thinking strategies each of which emphasizes a different aspect. Halliday (2000).

When examining the vast literature on (HOTs), various definitions emerge. The literature related to (HOTS) strategy offers many definitions of the term, not all of them in harmony. Definitions seem to vary by context.

Western literature shows a taxonomical categorization conflict in the midest of a variety of terminologies for (HOTs), as some refer to the process critical thinking (Vygotsky, 1987). Some as problem – solving (Abdullah, 1998; Jonassen, 2002; Picciotto, 2004; Zettergreen & Beckett, 2004), some as reflective reasoning (Dana & Yendol – Silva 2003; Kuo, 2002; 1987; Thompson, 2002), while others as the top four levels of

Bloom's taxonomy (Chen, 2004; Paul, 2003; Scriven & Paul, 1996; Stoner, 1997; Toledo, 2000).



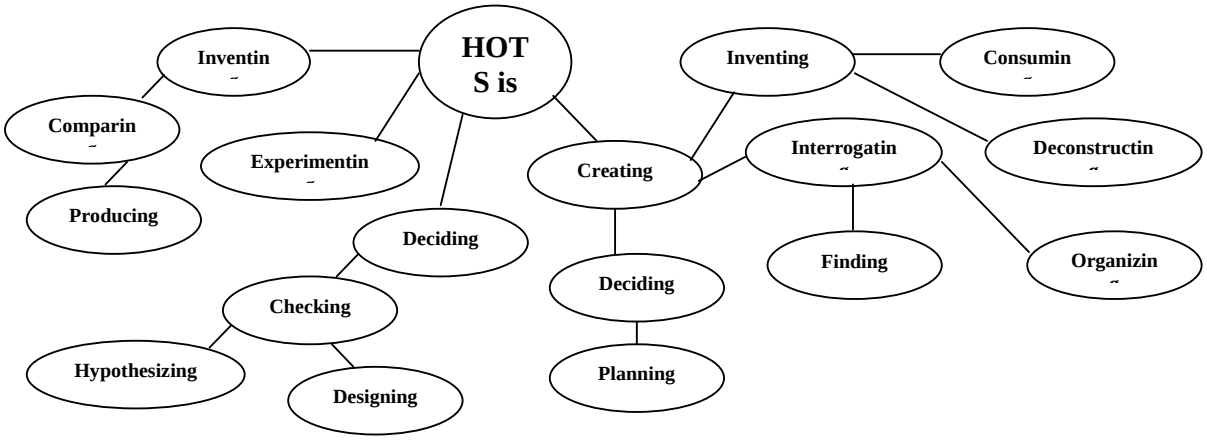
shows (HOTs) strategies in general used to understand (Reading Comprehension)

While students must be able to develop comprehension, it is equally important that students begin the processes of thinking critically (HOTs) about content being taught. Kalman(2002) .

Higher order thinking: Also called "critical" or strategic" thinking, higher order thinking can be described as the ability to use information to solve problems, analyze arguments, negotiate issues or make predictions

(Underbakke, Borg, & Peterson, 1993, Wenglinsky, 2002). It involves examining assumptions and values, evaluating evidence, and assessing conclusions (Petress, 2005). Four of the nine categories of instructional strategies found by Marzano (1993) to be related to student learning deal specifically with higher order thinking skills.

Higher – Order Thinking is:



Adapted from Mcpeck (1981).

Higher – Order Thinking is not:

☐ Regurgitation.

☐ Rote learning.

☐ Recall.

☐ Remembering.

(HOTS) involves the transformation of information and ideas. This transformation occurs when students combine facts and ideas and

synthesize, generalize, explain, hypothesis, or arrive at some conclusion or arrive at some conclusion and interpretation. Manipulating information and ideas through these processes allow students to solve problems, gain understanding and discover new meaning. Tomei (2005).

Reading Comprehension and (HOTS)

This section will review literature emphasizing the connection between Higher Order Thinking Skills and reading comprehension. The finding of the researcher indicates reading comprehension is directly related to the ability of students to reason or think about printed material.

The relationship between (HOTS) and reading comprehension is closely related. It acknowledges that (HOTS) strategies can facilitate reading comprehension and reading comprehension can contribute to (HOTS) growth.

After looking at the problem area at the school, using higher order thinking strategies was deemed critical for reading comprehension. Where working with today's students, styles of thinking and learning are every bit as important as levels of ability .In 1987, Ericson stated that the best time to help students learn strategies critical reading comprehension is at the basic level, as it will form a basis for their success at higher level of education.

The ability to read and comprehend is a necessary life skill that can direct future opportunities and eventual personal successes. This skill

incorporates not only word calling (remembering) but also includes, more importantly, whether or not the reader derives meaning from the printed word. A number of our students are so concerned with reading accuracy that they forget the real purpose is comprehension.

The goal of all readers should be understand what they read. Teele (2004). Research shows good readers are actively involved with the text, and they are aware of the processes they use to understand what they read. Teachers can help improve students comprehension through higher order thinking strategies. Predicting, making connections, visualizing, inferring, questioning, and summarizing are strategies shown by the researcher to improve reading comprehension. Block & Israel (2005).

It is important to teach the strategies by naming the strategy. Strategies to develop reading comprehension in this study were having learners make questioning, inferring and summarizing. These strategies were suggested in the literature and by knowledgeable others, and related to researcher interest.

Questioning:

Using questioning strategies can help students prepare for reading and understanding the text as it is being read.

Historically and currently, teachers use questioning as a mode of teaching learning and assessing students' understanding of texts. Pressley

(2000). Questioning, as described by Harvy and Goudvis (2000p.45) is "the master key to understanding".

During the past several decades there has been a great deal of research on how to improve students' reading comprehension. An outcome of this research is a plethora of literature that emphasizes the need for teachers to provide multiple opportunities for students to make meaningful connections with texts. Significantly, taxonomies such as Blooms (1957); Barrett's (1968) and Taba(1975**)** were published to help teachers to simplify the task of teaching reading comprehension by using a range of questioning strategies and more importantly to pose more higher – level questionings around texts.

The ability to know how to question to understand the written material is a crucial attribute of a teacher. However, in today world, the ability to form questions to aid in understanding and develop deep thinking now must become part of students skill set. "To know how to question is to know how to learn well" Chin, Brown, and Bruce (2002, p. 547).

Traditionally, teachers brought the questions to the students, students then responded with the correct answer. Students to become active thinkers and questioners, educators must become aware of classroom practices that may inhibit the development of critical thinking and questioning skills – to interact with written material. (Flick, 1998), in a study of two middle school science teachers, it was found that the teachers didn't allow time to instruct students on how to form questions pertaining to the tasks they were

performing. One of the skills Flick feels necessary for comprehension is for students to learn to form clarifying questions while reading text. The teacher should not be the heavy on the tiller of the ship, but rather the wind that fills the sails, allowing the students to set general course.

Larkin (2002) stresses the importance of questioning as a means to encourage students to think, by asking for example:

- What is my problem?
- What is my plan?
- How am I going to proceed?

He also emphases the importance of asking children to predict and build theories by asking. "What do you think and why?"

Devereux (2003) supports this analysis, providing examples of key questions such as:

- What will happen if you ……?
- Have you thought about ……..?
- How can you fix this …….?
- Why do you think this will happen …….?

The literature indicates that the level and quality of questioning that teachers pose in the classroom does have significant effects on students understanding (Harrop & Swinson, 2003).

Over the past few decades, extensive studies on comprehension have generated much information about the effectiveness of questioning on students' learning professional literature is rife with suggestions on the importance of questioning as well how to generate relevant appropriate questions. Some suggestions on how teachers can construct good questions are discussed by Richardson, Morgan and Fleener (2006) include:

- Asking simple questions.
- Identifying the purpose of each question.
- Share with students the reasons for each question.
- Encouraging students to ask questions.
- Providing opportunities for students to practice answering questions at various levels of comprehension.

Narato & Canon (2008) reported that reading strategies such as higher thinking techniques for questioning, inferring, predicting, and collaborative learning, found to increase students' comprehension.

Helping students improve their reading comprehension beyond knowledge require understanding of Bloom's (1956, as cited in Wong_& Wong 1998), higher thinking skills of comprehension and application, and strategies to develop them. For reading comprehension in learning students can retell or translate what they understand in their own words in written form, put information in order, compare and contrast, and interpret it.

Cummins (2009) affirms that activating and building prior knowledge by questioning helps students learn content, and suggest strategies such as brainstorming or discussion, using both visuals and graphic organizers and collaborative learning, found to increase students' comprehension.

Nettles (2006) asserted that teachers often fail to ask appropriate questions in the classroom because they tend to make the assumptions that students already know the comprehension process, or that the strategies they use to read narrative texts can be transferred to expository or information texts. Some teachers are not strong in their knowledge or have a deeper understanding of the text.

To conclude teachers' questions are of little value unless they have an impact on student learning. Yet comparatively few studies of questioning have been concerned with the relationship between use of questioning strategy and reading comprehension. Questioning is vital to classroom learning, especially in reading comprehension. The challenge to teacher is offer direct, explicit instruction in questioning and comprehension strategies. It is also important the instruction of best practices occurs in the context of meaningful reading.

The second strategy of (HOTs) used by the researcher is:

Inferring: This refers to reading between the lines.

Students need to use their own knowledge along with information from the text to draw their own conclusions Serafini, (2004). In order for reading comprehension success, students must be able to infer. Through inferring students will be able to draw conclusions, make predictions, identify underlying themes, use information to create meaning from text, and use pictures to create meaning Harry & Goudvis, (2000). Students can be taught to use illustrations, graphs, and titles from the text to make inferences.

Inferring is a strategy process in which one generates assumptions, makes predictions, and comes to conclusions based on the given information Anderson, (2006). Without the ability to draw inferences students may fall behind their peers in regards to understanding appropriate age level curriculum. These students do not grasp the concept of using prior knowledge to figure out what text is implicating. Students are unable to answer questions that require further thought and imagination than what the text implicitly states Hansen, (1981).

According to Sencibangh (2007) many teachers report that students in their classroom are unable to deduce thoughtful inferences. This is widest when students can not generate inferences naturally and spontaneously. Students' underdeveloped reasoning abilities, lack of prior knowledge, and or overdependence of prior knowledge cause them to invent plausible but inaccurate answers, which may create barriers in comprehension.

Reading comprehension is both a product and a process; it requires purposeful strategic effort on readers' part**.** Byer(2002). Outlines what strategies readers use to comprehend texts. These include "anticipating the direction of the text, or prediction, seeing the action of the text, visualizing, contemplating and then correcting whatever confusions we encounter, clarifying, and connecting what is in the text to what is in our mind to make an educated guess about what's going on. Students often fail at comprehension of text because they can not make an inference (p. 45- 40).

Inference consists of one's ability in using non linguistic information for comprehension a linguistic utterance Negin, (1987). Inferring is defined as drawing conclusions or making decisions, usually about something that is already known or given.

According to Hutchins and Zimmerman (2009), inferring is going beyond the literal text, making it personal and three – dimensional, and waving it into our own. They also state when reading, the limits of the literal text is enhanced by using past experiences and beliefs, new interpretations.

Drawing inferences requires the reader to expand on what is stated in the text. Readers must use prior knowledge of different experiences and situations, in combination with clues found in the text to reach conclusions that are important in understanding the read material. Wallace, (2002).

In order for reading comprehension success, students must be able to infer. The purpose of reading is comprehension. Yang, (2006) outlines what strategies readers use to comprehend texts. These include "anticipating the direction of the text, or predicting, seeing the action of the text, visualizing, contemplating, and then correcting whatever confusions we encounter, clarifying, and connecting what is in the text to what is in our mind to make an educated guess about what is going on, inferring. Students often fail at comprehension of text because they can not make an inference. (P. 45 – 46).

Snowling (2004) states students' understanding of the text seems to be literal. Students do not go beyond the words on the page, and do not actively develop integrated mental representation of what they read.

Richard (2002) states while readers try to comprehend the text, reader make representations of the text which requires integration of information across sentences. This integration is achieved by the reader linking the text to relevant knowledge and experiences.

Inferring use for increased text comprehension is inherently done by readers. Proficient readers infer implicit information from the text and create meaning based on information. Non – proficient readers can not create this meaning based on the text and often will have difficulty comprehending what is read. Harvey and Goudvis (2000).

To conclude, comprehension at any level can not occur without the right kind of inferring, at an appropriate point in the text where a gap actually exists and an inference is required.

Inferring is the bedrock of comprehension, reading and everyday life. When students infer, they draw conclusions based on clues in the text or situation, make predictions.

Summarizing

Summarizing as a strategy for improving comprehension is the third strategy used by the researcher which requires the reader to determine what is important when reading and to condense the information in the readers own words Alder, (2001). Teacher modeling and student practice of the summarization process has proven text comprehension. Students can be taught to identify main ideas, connect main ideas, eliminate redundant and unnecessary information, and remember what they read.

Brown Campione and Day (1981) used a rule based approach which includes deleting trivial and redundant material. Their research suggests that younger and low – achieving students have difficulty using summarization often they will select what interests them rather than what is a good organizer for the information that is to be summarized.

Palinscar (1989) looked at the effect of summarization on developing a reading passage. They found a correlation between good summarization skills and development. In a study on the effects of teaching high achieving

students to summarize, Wood, et al. (1999) found that students can gain some benefit from practice summarization; it is more efficient for teachers to teach summarization than to summarize the text for the students.

The value in the ability to accurately summarize texts seems two fold: recalling key facts/ information, and using these key facts and information to build deeper knowledge as found by McGee et al. (2000).

Teaching students to summarize what they read is another way to improve their overall comprehension of text.

Dole, Duffy, and Pearson (1991) describe summarization strategy as follows:

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

Indeed, most people with relevant experience will agree that summarizing is a difficult task for many students. Many students require instruction and practice in summarizing before they are able to produce good or oral and written summaries of text. Interestingly, research suggests

that instruction and practice in summarizing not only improves students' ability to summarize text, but also their overall comprehension of text content. Thus, instruction in summarization can be considered to meet dual purposes: to improve students' ability to summarize text and to improve their ability to comprehend text and recall.

One could also include the summarizing strategy to enhance reading comprehension. Brown, Campione and Day (1981) used a rule-based approach to summarizing which includes deleting trivial and redundant material, substituting super ordinate terms for lists and selecting or inventing a topic. Their research suggests that younger and low-achieving students have difficulty using these rules especially the last one, which requires them to select or invent a topic. Often, they will select what interests them rather than what is a good organizer for the information that is to be summarized. McNeil and Donant (1982) found that sixth graders could be taught to use summarization rules that significantly affected their comprehension scores.

In conclusion, all the researchers who have conducted their researches on (HOTS) strategy agreed upon the significant role of applying the (HOTS) strategy in teaching reading comprehension for its great benefits that may serve a variety of learning purposes. They may serve as a student's journal or record or instruction, providing students with a systematic means to integrate their new knowledge with their prior understanding, activating students prior knowledge and stimulating them to

use that knowledge to interact with the text and promoting (HOTS) as a pre reading activity that encourages students to create their own ideas.

Practical Section

Several studies have investigated (HOTS) strategies on students, and reported that teaching these strategies is important for further educational success.

Hansen (1981) conducted a study on second grade students' inference comprehension strategies. Students were split into two groups experimental and control. The experimental group received special instructions on how to make inferences about a story. The control group was taught the suggested lesson in the teachers' manual on story comprehension. After ten days, students were asked comprehension questions including two inferential questions. The experimental group scored significantly better on the inferential questions than the control group.

McNeil and Donant (1982) found that sixth graders could be taught to use summarization rules that significantly affected their Comprehension scores. Research suggests that instruction and practice in

Summarizing not only improves students' ability to summarize text, but also their overall comprehension of text content.

A paper presented by Denner (1986) at the Spring Conference of the Idaho Council of the International Reading Association aimed at examining

the effectiveness of story – impressions, (a previewing strategy) on story comprehension on remedial eight grade students.

They were asked to write predictions or "story – guesses" based on a series of one-word clues that had been extracted from the material to be read. Having written a logical "hypothesis story" of their own, students then read the assigned material and confirmed, modified, or disconfirmed their predictions. Results indicated that story impressions had a significantly facilitative effect on reading comprehension.

Another study conducted by Qudah (1987) aimed at investigating the effect of higher order thinking strategies of a topic on students', reading comprehension. The sample which was chosen randomly consisted of 216 male secondary students. The materials used for the study were:

a. An appropriate reading passage.

b. A comprehension multiple choice post test to measure subjects' comprehension of a reading passage.

c. A questionnaire to measure subjects' background knowledge about the reading passage and

d. A cloze test to measure subjects' overall language proficiency in English.

The data were analyzed using a two way analysis of covariance (ANOVA). The results indicated significant difference in reading

comprehension $(\alpha = 0.05)$ due to higher order thinking strategies. There was no statistically difference due to grade level and there was no statistically significant difference due to the interaction between grade level and background knowledge.

Neuman (1990) analyzed 42 fifth grade students' inferencing strategies; students were instructed to read two non – fiction mystery stories contain stopping points which directed the student to stop reading. At these predetermined stopping points, the examiner would ask questions to discover the students' inferring patterns. These questions include:

a. Did you find any clues in your reading?

b. What do you think will happen next? Why do you think so?

c. Does this give you any ideas?

Results indicated that subjects used eight different inferencing strategies throughout the study. Inferring occurred during the encoding process, as students were interpreting incoming data.

A study by Malendez (1991) was conducted to investigate the effect of semantic mapping, reading level on culturally diverse students, particularly Filipino – Americans. The results of this investigation indicated a strong relationship between semantic mapping and reading comprehension. This study also indicated a strong correlation between semantic mapping and reading level. This study shows the effectiveness of

semantic mapping as an alternative technique for bridging new and known concepts.

Myettee (1993) compared the effectiveness of three (HOTS) strategies on hearing impaired children:

a. a vocabulary strategy that gave the subjects, eight clues for finding the meaning of unknown words from context;

b. a story schema strategy that taught the subjects eight important elements of a story. Forty – five hearing impaired students participated in the study. They were evaluated before and after each treatment. Both analysis of variance and covariance were conducted on the scores of the pretests, post training tests, and post tests.

Results indicated that the metacognition and story schema strategies were significantly effective in increasing the comprehension of the subjects, whereas, the vocabulary strategy did not significantly increase it. Both the post training test and the post test scores for the metacognition and story schema group were significantly different from the pretest scores.

Usen (1993) investigated whether comprehension would be affected by utilizing (HOTs). Subjects were 57 students (lower level 11^{th} graders) in 4 classes. Two classes totaling 29 students utilized (HOTs) strategies before two units of study. In the other two classes with 28 usable subjects, no (HOTs) strategies were used prior to reading, otherwise instruction was the same. Results showed no significant difference between the two groups.

Questions answered by this study were

Ninety-eighth 10th grade students from a southern California city high school, stratified upon gender, were randomly assigned to one of the three treatment groups, text – based, experience – based and a control group. For six consecutive weeks, subjects received one hour of treatment each week within the same group and were evaluated with a multiple – choice comprehension test and a free written response. Treatments were written and instructions were designed to engage students in a thinking process. It was either a text centered pre-reading activity, or a stimulus that aimed at activating students' prior knowledge about a particular theme before reading.

Analysis of variance using regression revealed that both experimental groups were more effective than the control group. However, the text based treatment was more effective for comprehension, and experience-based conditions yielded more favorable results for free written response to narrative texts. There were also differences in the ways girls and boys responded to narrative text.

A study by Olson (1998**)** reinforced that a (HOTS) Strategies would yield gains in reading comprehension and reading rate scores for participants who identified English as a primary language and those who identified it as a secondary language compared to control group who received either no tutorial or a tutorials with content that was unrelated to the experimental reading test. Specific questions addressed whether a

context – relevant computerized tutorial enhanced reading rate and reading comprehension on subsequent materials related to the tutorial. The English speaking, context – relevant participant's demonstrated enhanced reading comprehension compared to English as a second language participant, though significance was not found to exit between tutorial groups.

Grigaite (2005) conducted a study to investigate the effect of using higher order thinking strategies on developing child's thinking skills. the researcher operations, classifications and serrations in a child's seventh year. Fifty-seven children at the age of six took part in the research. The findings revealed that students in the experimental group who participated in the training were creative. They revealed high degrees of cognitivism.

A recent study conducted by Luz Marina (2009) to examine the reading comprehension of public school eight graders who experienced a direct reading – thinking approach with strategies for comprehension and application.

The strategies used were prediction, prior knowledge, graphic organizers and questions. Data analyzed included participants perceptions of the usefulness of the strategies and students work on the graphic organizers and reading worksheets .Findings showed that participants thought that the strategies improved reading comprehension.

In conclusion, many studies revealed almost the same findings; they showed that the effects of using (HOTS) strategies do not only improve the

learner's reading comprehension, but also their thinking, brainstorming and writing abilities.

The previous review emphasizes the importance of (HOTs) strategies as instructional strategies for the development of reading comprehension. It also highlights the need for conducting the present study.

By reviewing the related literature, it has become obvious that this study is really needed for some important reasons. It is the first study which aims at investigating and comparing the effectiveness of questioning, inferring and summarizing (HOTs) strategy within the same experiment. It is also the first time that such a study is conducted at the Tenth Grade level in Palestine.

Summary

In chapter two, the researcher has presented several relevant studies and literature related to the effects of (HOTS) strategies on the Tenth-Graders' achievement in reading comprehension. There are various studies and views which have emphasized the importance of this strategy in first language learning situations, but the matter has rarely been investigated in the second language.

Chapter Three
Study Design & Methodology:

Study Population

The study was conducted on all 10th Graders in the public schools of Jenin District in the academic year 2009/2010.

Study Sample

The study sample was selected according to pre-determined criteria, and will consist of (294) students divided into 4 male and 4 female sections. Three male and three female sections were assigned to the three experimental groups, while the remaining two male and female sections were assigned to the control group.

Study Instrument

In order to achieve the study objectives, the researcher reviewed the related literature and developed a reading achievement test. Students in all groups will be taught according to one of the three strategies of (HOTS) (questioning, inferring, and summarizing), while the control group will be taught without using any of these elements. Afterwards, students in all groups were asked to answer the questions of the reading achievement test.

Statistical Process

The results will be analyzed using suitable process SPSS program such as:

1. Two analysis of variance,

2. paired t-test,

3. Shafee Post-Hoc Test

Variables of the Study

Independent variables:

1. Gender (males and females),

Dependent variable

Integrating "Higher order thinking skills (HOTS) on the Tenth Graders to improve learners' achievement in Reading Comprehension in English language in Jenin District.

Methodology

Introduction

The researcher in this chapter presents the design and the procedure of the study. In other words, this chapter respectively includes the population and the sample procedure, the study design, instruments as well as their validity and reliability procedure and data analysis procedure.

Population

The population of this study consisted of all male and female Tenth Graders in the public schools of Jenin District in the academic year 2009-

2010. The population of the study consisted of 2046 male and female students divided as follows: 1041 male students divided into 36 sections. 1005 female students divided into 31 sections.

These statistical numbers were taken from the Directorate of Education in Jenin District during the second semester for the Academic year 2009/2010.

Table (1): Population Distribution

Gender	No. of Sections	No. of students	Percentage
Male	36	1041	50.9
Female	31	1005	49.1
Total	67	2046	100

The teachers in these schools are university graduates holding a minimum of BA degrees in English Language, while their teaching experiences range between 5-20 years. Moreover, it is known that government school teachers follow the same teacher's book and the same students' books as well.

Sample

The sample of the study (stratified) consists of 294 students enrolled in three (one male and two female) secondary schools divided into 8 sections.

Table (2): Distribution of the subjects of the study (Sample distribution table)

Gender	No. of schools	No. of sections	No. of students in each group	No.	Total
Male	1	4	Questioning	34	141
			Inferring	36	
			Summarizing	34	
			Control	35	
Female	2	4	Questioning	35	153
			Inferring	42	
			Summarizing	35	
			Control	41	
Total	3	8		394	

The sample selection was based on the following criteria:

1. Ten schools were initially selected depending on the opinions of their principals. They emphasized that Tenth Grade students were normally distributed into the sections at the beginning of the first semester. These schools contained different sections of the Tenth Graders which made it easy for the researcher to apply his experiment in two or three schools instead of eight schools.

2. The students' scores on the first semester were collected. After comparing the scores of the different sections, 8 male and female sections whose grades were closer to the normal distribution were selected.

3. It is worth mentioning that the sample tests of the eight sections were similar in their components. They included questions about reading and writing skills and questions on vocabulary and structure. The questions on reading and writing skills were given almost half of the total marks,

while the questions on vocabulary and structures were given the other half. Naturally, their had been a slight difference in the distribution of the marks.

Design of the study

This study was conducted on (294) Tenth Grade students from three secondary schools in Jenin District in order to integrate (HOTS) on the pupils' achievement in reading comprehension. However, strictly speaking, there were four groups, three experimental and one control, and each having male and female students.

The students of the experimental groups were taught a comprehension passage using the three (HOTs) strategies whereas those of the control group were not exposed to this process.

Variables of the study

The independent variables of the study were (HOTs) strategies at four levels (Questioning, Inferring Summarizing, and control); gender, and the interaction of (HOTs) with gender. The dependent variable was the achievement on the test of the reading comprehension skills.

Research instruments

The researcher used the following instruments to conduct the study:

1. A reading passage about Aral Sea entitled "What if ….?", chosen from the English for Palestine. (See Appendix A).

2. Three (HOTs) strategies for the experimental groups including the key words of the reading passage (See Appendices B C, D, and E.).

3. A reading comprehension achievement test consisting of 40 questions of different types (See Appendix F).

4. An answer key sheet including the scoring scale (See Appendix G).

Validity of the instrument

To guarantee the content validity of the research instruments, they were given to a group of TEFL specialists from An-Najah University to examine their adequacy to the Tenth Graders in Palestine. They were also asked to examine the objectivity included in the achievement test in relation of the study.

The TEFL specialists consisted of three university lecturers, three English language supervisors, and three experienced English language teachers of the Tenth Graders. Their comments were received and the necessary modifications were accordingly made.

Test Reliability

To establish the test reliability, the test was subjected to a pilot study in the field by means of a random sample consisting of 30 students, 15 male and 15 female representing the Tenth Grade students in the boys and girls' public schools in Jenin District. Two weeks later the researcher administered the same test to the same sample. The test-retest was applied

to overcome the effect of remembrance. Person's Correlation Coefficient was used and showed a reliability (0.92) which is appropriate to this kind of research.

Procedures of the Experiment

The researcher adopted the following procedures to conduct the experiment during the second semester of the academic year 2009/2010.

The researcher obtained a letter from An-Najah University –Faculty of Graduate Studies addressed to the Ministry of Education in Ramallah to allow her to conduct her study. Permission was obtained from the Ministry of Education to carry out this study. The researcher took down the names of the schools in which she wanted to apply her experiment from the Directorate of Education in Jenin. After that she held a meeting with the teachers in the schools where the experiment will be conducted to explain the purpose of this study and the steps to be followed, and to distribute the necessary worksheets. Each experimental – group teacher, the selected reading passage according to one of the taught (HOTs) strategies, questioning, inferring or summarizing while the teachers of the control groups taught the reading passage without using any (HOTS) strategies.

The questioning group teachers distributed the handouts which included varied questions which were attached to the reading passage, then asked some general questions in order to let their students infer the main idea of the assigned reading passage. They asked questions such as:

1. Have you ever been to a sea?

2. When / Where?

3. Did you swim in it? Why?.

Then they introduced the key words using the given questions, giving synonyms and antonyms, or depending on translation when it was necessary.

- The inferring group teachers led a discussion so as to motivate their students and let them infer the idea of the assigned reading passage.

  They asked different kinds of questions (see appendix D) such as:

1. From the title, and the picture guess what is the reading passage will be about ?

2. What benefits can we get from seas?

3. Do you know the name of the sea that shrinked or dried? Give two reasons for this?

Then they introduced the key words depending on giving synonyms or antonyms, or using translation when it was necessary to clarify the meaning.

- The summarizing group teachers distributed sheets which contained simple written paragraphs prepared by the researcher in order to

provide students with a model, in order for the learners to use it as a model. Then students rewrite the passage with their own words.

Afterwards, teachers introduced the key words by giving synonyms or antonyms, or using translation when it was necessary.

- The control group teachers didn't use any (HOTs) strategy to present the topic of the reading passage. Instead, they only introduced the key words depending mainly on translation, and then asked students to read the passage silently to answer the questions of the achievement test.

The experimental group teachers needed almost one hour to teach the assigned reading passage. Out of the 60 minutes, they spent almost 15 minutes on the (HOTs) strategies. The control group teachers needed almost 50 minutes to teach the assigned reading passage since they didn't use any (HOTs) strategy. Students of the different groups were given one complete hour to answer the questions of the comprehension achievement test.

The researcher visited the various groups so as to make sure that the process was being implemented properly. The test was applied once more after one week this time it was applied unexpectedly without preparation, to check how much information the students retained from the first application, and then to compare between the first and second application.

Data Collection

When the experiment was over, the test sheets were collected and were given to two voluntary qualified teachers to correct and mark them according to the answer key and the scoring scale. It is worth mentioning that the two teachers were given proper guidance by the researcher on how to correct the papers. To sustain system activity, the researcher examined the papers again and found that they were corrected properly and accurately.

The achieved scores were statistically scored and computed, and the findings were defined.

Data Statistical Analysis

To analyze the students' responses on the achievement test and the collected data, the researcher uses the following: Basic statistical description through means and standard deviation, analysis of Variance, One Way ANOVA, paired t-test and independent t-test means and standard deviation.

Summary

The researcher in this chapter introduced the population of the study, sample, research design and the procedures used in confirming or rejecting the hypothesis of this study. Validity and reliability procedures as well as the statistical analysis used in this study were also described in this chapter.

Chapter Four
Analysis of Results

Introduction

The researcher in this chapter presents the findings. These results are divided into two major parts. The first part is concerned with the results of the first four hypotheses which dealt with the students' achievement between first and second application for the three experimental groups and the control group. The second part consisted of the results related to the fifth and sixth hypothesis which dealt with the students' achievement in the first and second application due to gender, group and the interaction between gender and group.

Part One

The results which are shown in this section are related to the first four hypotheses.

The first hypothesis says: "There is no significant difference at $(\alpha = 0.05)$ in the students' achievement between first and second application for the questioning strategy group.

To test this hypothesis, paired t-test was used and the results are presented in table (3) below:

Table (3): Results of paired t-test for the students' achievement between first and second application for questioning group

Gender	First		Second		t-test	Sig. *	%
	Means	SD.	Means	SD.			
Female	**57.96**	**19.90**	**53.66**	**19.48**	**2.45**	**0.01***	**-7.41**
Male	**71.18**	**16.34**	**39.84**	**16.94**	**2.58**	**0.01***	**-1.88**
Total	**64.24**	**19.36**	**61.35**	**19.93**	**3.009**	**0.004***	**-4.49**

*** Significance at** $(\alpha = 0.05)$

The result of table (3) shows that there is no significant difference at $(\alpha = 0.05)$ in the students' achievement between first and second applications for the questioning strategy group in favor of the first application for both male and female students.

So, the result of table (3) provide a piece of evidence for the rejection of the first hypothesis which revealed that there is a significant difference at $(\alpha = 0.05)$ in the student's achievement between first and second application for the questioning group in favor of the first application for both male and female students. This difference in the mean scores is shown in figures (1), (2) and (3).

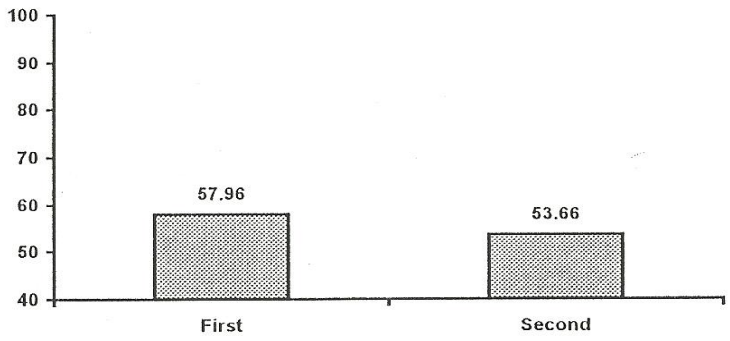


Figure (1): Means of the first and second application for female students in the questioning group

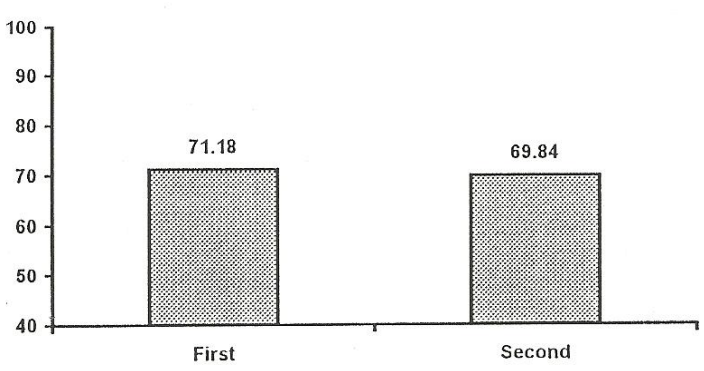


Figure (2): Means of the first and second application for male students in the questioning group

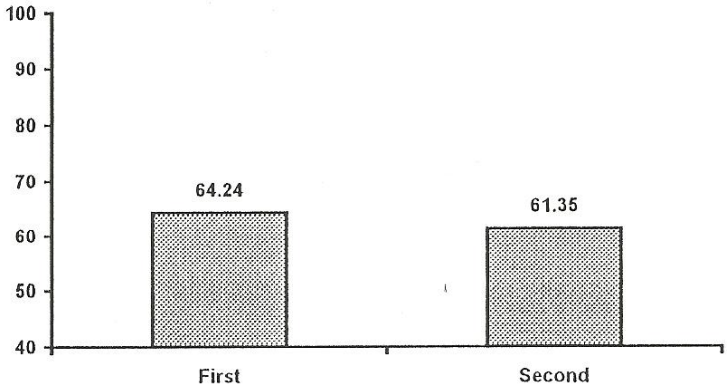


Figure (3): Means of the first and second application for both male and female students in the questioning group

The Second Hypothesis Says: "There is no significant difference at$(\alpha = 0.05)$ in the students' achievement between first and second application for the inferring group."

To test this hypothesis, paired t-test was used and the results are indicated in table (4) below:

Table (4): Results of paired t-test for the students' achievement between first and second application for inferring group

Gender	First		Second		t-test	Sig. *	%
	Means	SD.	Means	SD.			
Female	**65.25**	**17.72**	**64.88**	**17.69**	**1.30**	**0.20**	**-0.56**
Male	**74.67**	**14.03**	**74.85**	**13.09**	**0.17**	**0.85**	**0.24**
Total	**69.89**	**16.59**	**69.79**	**16.27**	**0.20**	**0.84**	**-0.13**

*** Significance at** $(\alpha = 0.05)$

The results of the paired t-test for the students achievement between first and second application for the inferring group in table (4) provide a piece of evidence for accepting this hypothesis which indicates that there is no significant difference at*$(\alpha = 0.05)$ in the students' achievement between first and second applications for the inferring group. These results are illustrated in figures (4), (5), and (6).

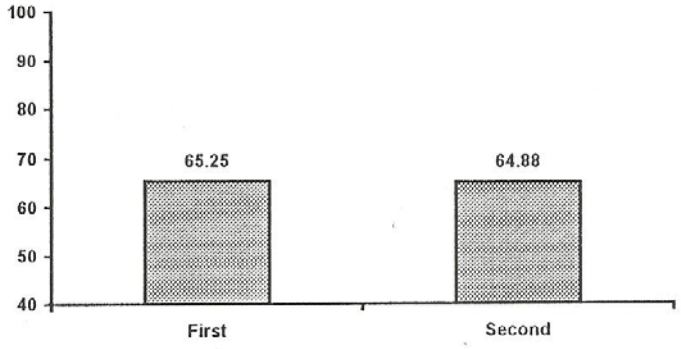


Figure (4): Means of the first and second application for female students in the inferring group.

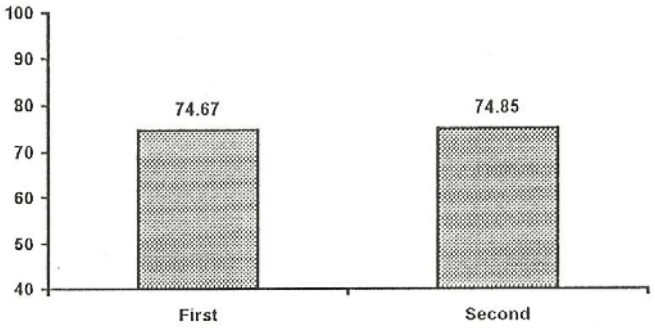


Figure (5): Means of the first and second application for male students in the inferring group.

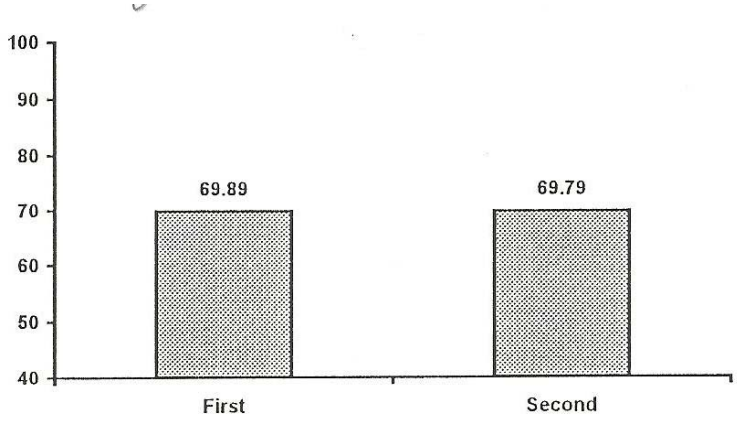


Figure (6): Means of the first and second application for both male and female students in the inferring group.

The third hypothesis says: "There is no significant difference at $(\alpha = 0.05)$ in the students' achievement between first and second application for the summarizing group.

To test this hypothesis, paired t-test was used and the results are presented in table (5) below:

Table (5): Results of paired t-test for the students' achievement between first and second application for summarizing group

Gender	First		Second		t-test	Sig. *	%
	Means	SD.	Means	SD.			
Female	**73.08**	**16.83**	**72.85**	**17.10**	**1.31**	**0.19**	**-0.31**
Male	**74.38**	**14.25**	**74.32**	**14.11**	**0.33**	**0.73**	**-0.08**
Total	**73.72**	**15.51**	**73.57**	**15.60**	**1.18**	**0.24**	**-0.20**

*** Significance at** $(\alpha = 0.05)$

The results of table (5) show that there is no significant difference at $(\alpha = 0.05)$ in the students' achievement between first and second applications for the summarizing group. These results provide a piece of evidence for accepting this hypothesis; such results are shown in figures (7), (8) and (9).

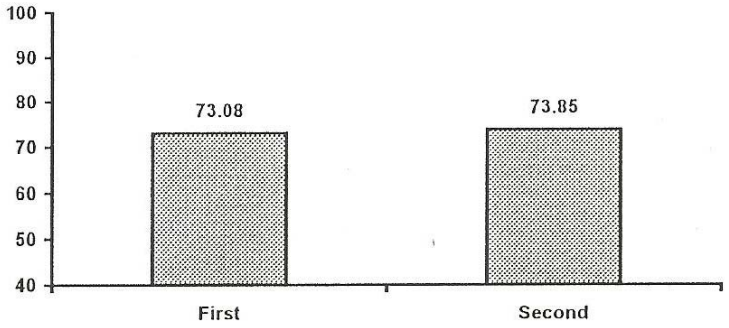


Figure (7): Means of the first and second application for female students in the summarizing group.

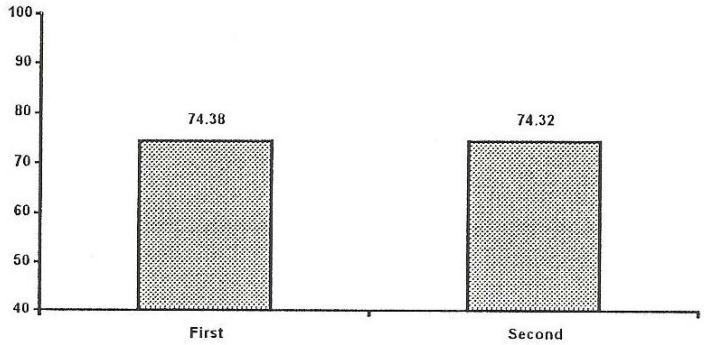


Figure (8): Means of the first and second application for male students in the summarizing group.

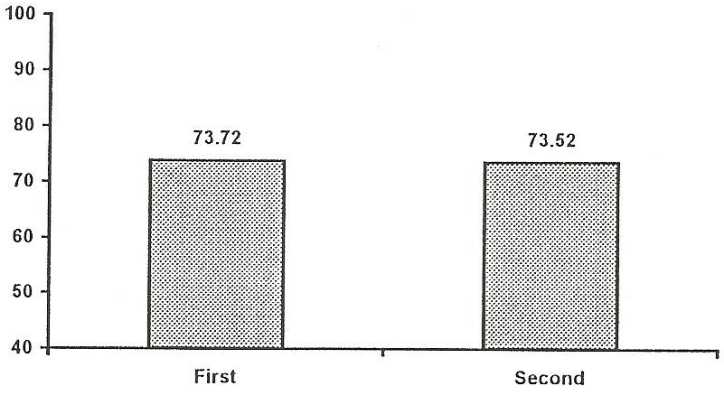


Figure (9): Means of the first and second application for both male and female students in the summarizing group.

The fourth hypothesis says: "There is no significant difference at$(\alpha = 0.05)$ in the students' achievement between first and second applications for the control group."

To test this hypothesis, paired t-test was used and the results are indicated table (6) below.

Table (6): Results of paired t-test for the students' achievement between first and second application for control group

Gender	First		Second		t-test	Sig. *	%
	Means	SD.	Means	SD.			
Female	**58.46**	**18.78**	**53.21**	**19.01**	**3.19**	**0.003***	**-8.98**
Male	**67.32**	**17.20**	**63.69**	**16.97**	**3.68**	**0.001***	**-5.39**
Total	**62.48**	**18.50**	**57.96**	**18.74**	**4.50**	**0.0001***	**-7.23**

*** Significance at** $(\alpha = 0.05)$

The results of table (6) show that there is a significant difference at$(\alpha = 0.05)$ in the students' achievement for both male and female students between first and second applications in favor of the first application. So the results presented in table (6) provide a piece of evidence for the rejection of the fourth hypothesis which showed that there is a significant difference at$(\alpha = 0.05)$ in the mean scores of the reading comprehension achievement test for both male and female students between first and second applications in favor of the first application. These results are clarified in figures (10), (11), and (12).

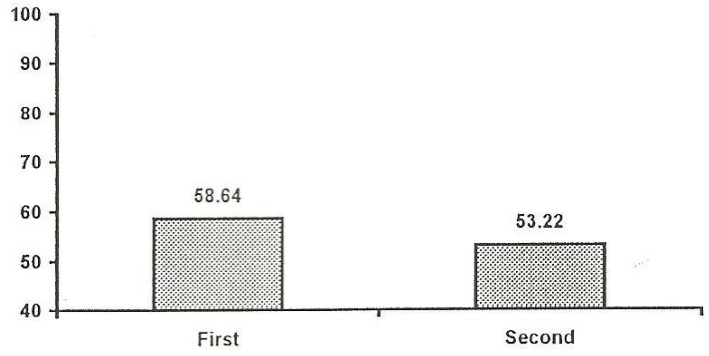


Figure (10): Means of the first and second application for female students in the control group.

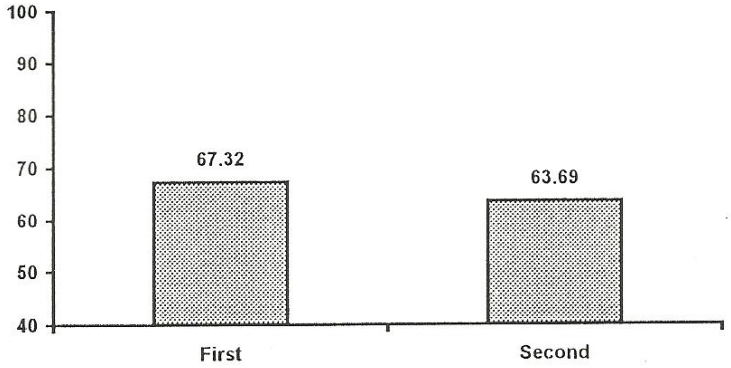


Figure (11): Means of the first and second application for male students in the control group.

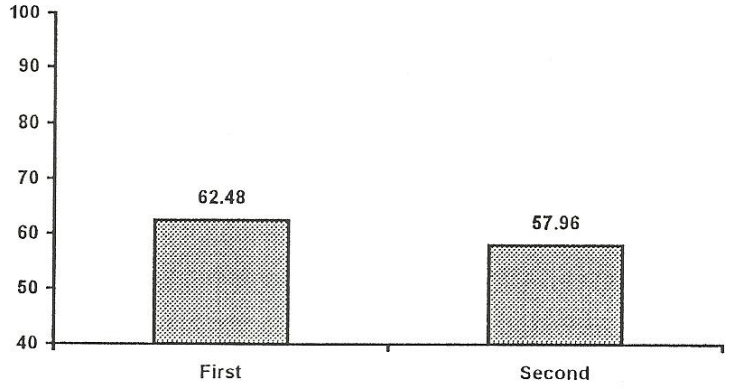


Figure (12): Means of the first and second application for both male and female students in the control group.

Part Two:

The results presented in this section are related to the 5th and 6th hypothesis.

The Fifth Hypothesis States: "There is no significant difference at $(\alpha = 0.05)$ in the students' achievement on the first application due to gender, group and interaction between gender and group."

To test this hypothesis, two-way analysis of variance was used.

Table (7) shows the means of students' achievement and table (8) shows the results of (two-way ANOVA).

Table (7): Means of first application students' achievement according to gender, group and interaction variables

Groups	*Gender*	*Mean*	*SD.*	*N*
Questioning	**Male**	**71.18**	**16.34**	**38**
	Female	**57.96**	**19.90**	**42**
	Total	**64.42**	**19.36**	**80**
Inferring	**Male**	**74.67**	**14.67**	**34**
	Female	**65.25**	**17.72**	**35**
	Total	**69.89**	**16.59**	**69**
Summarizing	**Male**	**74.38**	**14.25**	**34**
	Female	**73.08**	**16.83**	**35**
	Total	**73.72**	**15.51**	**69**
Control	**Male**	**67.32**	**17.20**	**34**
	Female	**58.64**	**18.87**	**41**
	Total	**62.48**	**18.50**	**75**
Total	**Male**	**71.87**	**15.65**	**140**
	Female	**63.22**	**19.24**	**153**
	Total	**67.35**	**18.11**	**293**

Table (8): Results of Two Way ANOVA for the differences in the students' achievement on the first test according to gender, group and interaction variables.

Source	Sum of squares	d.f.	Mean Squares	F	Sig. *
Gender	**4891.35**	**1**	**4891.35**	**16.68**	**0.0001***
Group	**5359.49**	**3**	**1786.46**	**6.09**	**0.0001***
Gender*Group	**1355.53**	**3**	**451.84**	**1.54**	**0.20**
Error	**83539.94**	**258**			
Total	**9584.48**	**292**			

The results presented in table (8) show the following:

- There is no significant interaction between gender and group variables.
- There is a significant difference at $(\alpha = 0.05)$ in the students' achievement on the first application due to gender.
- There is a significant difference at $(\alpha = 0.05)$ in the student achievement on the first application among the groups.

To determine these differences Scheffes' Post-Hoc test was conducted as shown in table (9).

Table (9): Scheffe's Post-Hoc test for students' achievement on the first test among group variables.

Group	Questioning	Inferring	Summarizing	Control
Questioning	**-**	**-5.65**	**-9.48***	**1.76**
Inferring	**-**	**-**	**-.382**	**7.41**
Summarizing	**-**	**-**	**-**	**11.24***
Control	**-**	**-**	**-**	**-**

*** Significance at** $(\alpha = 0.05)$

The results of table (9) show the following:

- There is a significant difference at $(\alpha = 0.05)$ in the students' achievement in the first application between:

- Questioning and Summarizing in favors of the summarizing group.
- Summarizing and control groups in favors of the summarizing.

These results provide a piece of evidence for the rejection of the 5^{th} hypotheses which revealed that there is a significant difference at $(\alpha = 0.05)$ in the students' achievement in the first application.

- There is significant difference at $(\alpha = 0.05)$ in the students' achievement in the first application between:

- Questioning group and (inferring, control).
- Inferring group and (summarizing, control).

Here the results provide a piece of evidence for accepting this hypothesis which indicates that there is no significant difference at $(\alpha = 0.05)$ in the students' achievement in the first application due to gender, group and interaction between gender and group. Such results are clear in figure (13).

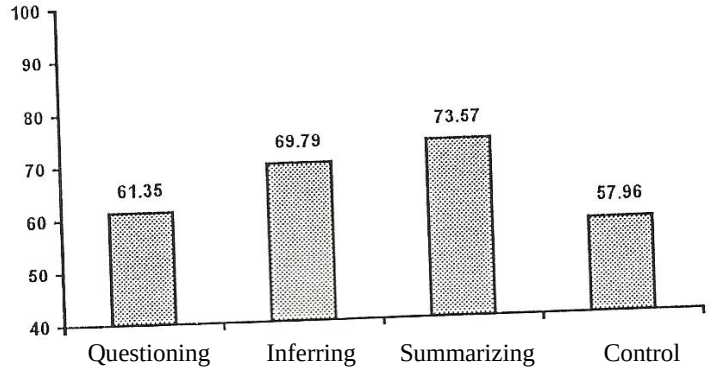


Figure (13): Means of students' achievement on the first application among group.

The last section focuses on the students' achievement in the second application due to gender, group and interaction between gender and group. In other words, the researcher in this section presents the results related to the 6^{th} hypothesis which says: "There is no significant difference at$(\alpha = 0.05)$ in the student achievement in the second application due to gender, group and interaction between gender and group."

To test this hypothesis, two-way analysis of variance was used.

Table (10) shows the means of students' achievement, and table (11) shows the results of (two-way ANOVA).

Table (10): Means of second application students' achievement according to gender, group and interaction variables

Groups	*Gender*	*Mean*	*SD.*	*N*
Questioning	Male	69.84	16.94	38
	Female	53.66	19.48	42
	Total	61.35	19.93	80
Inferring	Male	74.85	13.09	34
	Female	64.88	17.69	35
	Total	64.79	16.27	69
Summarizing	Male	74.32	14.11	34
	Female	72.85	17.10	35
	Total	73.57	15.60	69
Control	Male	63.69	16.97	34
	Female	53.21	19.01	41
	Total	57.96	18.74	75
Total	Male	70.65	15.88	140
	Female	60.50	19.99	153
	Total	65.35	18.81	293

Table (11): Results of Two Way ANOVA for the differences in the students' achievement on the second test according to gender, group and interaction variables.

Source	Sum of squares	d.f.	Mean Squares	F	Sig. *
Gender	6594.73	1	6594.73	22.65	0.0001*
Group	10636.87	3	3545.62	12.17	0.0001*
Gender*Group	2017.48	3	672.49	2.31	0.07
Error	82974.45	258			
Total	103389.18	292			

*** Significance at** $(\alpha = 0.05)$

The results presented in table (11) showed the following:

- There is significant difference in the students' achievement on the second application due to interaction between gender and group variables. So these results provide a piece of evidence for accepting this hypothesis.

- There is a significant difference at $(\alpha = 0.05)$ in the students' achievement on the second application between male and female students in favor of male students.
- There is a significant difference at $(\alpha = 0.05)$ in the students' achievement on the second application among group variables.

Here the results provide a piece evidence for the rejection of this part of the hypothesis which revealed that there is a significant differences in the students' achievement on the second application between male and female students in favor of males and also there is a significant difference on the second application among group variables.

To point out these differences, Scheffes' Post-Hoc test was conducted as shown in table (12)

Table (12): Scheffe's Post-Hoc test for students' achievement on the second test among group variables.

Group	Questioning	Inferring	Summarizing	Control
Questioning	-	**-8.44***	**-12.22***	**3.38**
Inferring	-	-	**-3.78**	**11.83***
Summarizing	-	-	-	**15.61***
Control	-	-	-	-

*** Significance at** $(\alpha = 0.05)$

- There is a significant difference at $(\alpha = 0.05)$ in the students' achievement on the second application between:
- Questioning and (inferring, summarizing) in favor of the inferring and summarizing groups.

- Inferring and control groups in favor of the inferring group.

So, this part of the hypothesis as in table (12) provides a piece of evidence for the rejection of the hypothesis which indicates that there is no significant difference in the students' achievement on the second application due to gender, group and interaction between gender and group.

- There is no significant difference at $(\alpha = 0.05)$ in the students' achievement on the second application between:

- Questioning and control groups.

- Inferring and summarizing groups.

So, this part of this hypothesis as in table (12) provides a piece of evidence for accepting this hypothesis. These results are clarified in figure (14).

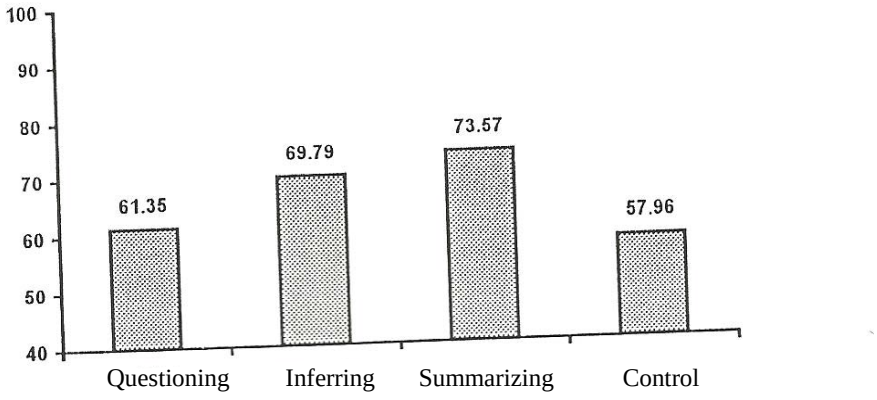


Figure (14): Means of students' achievement on the second application among groups

Summary

The researcher in this chapter has presented the findings and results of the statistical analysis. These results have been displayed in two sections in term of answers to the six hypothesis of the study. Two way analysis in the variance (2×4) Scheffee's Post-Hoc test and Paired t-test were used in the analysis of data collected for this study.

Chapter Five
Discussions of the Results

Introduction

The results displayed in the previous chapter will be discussed in this chapter.

Specifically speaking, the researcher presents his discussion of the hypothesis findings under two headings. The first section focuses on the effect of the four groups (the three experimental groups and the control group) in the students' achievement between first and second applications.

The second section deals with the effect of the first and second applications in the students' achievement due to gender, group and the interaction between gender and group.

The results in each section are also compared with other related studies to find whether these results are congruent with them or not.

Part One: Achievement in reading comprehension

This section includes discussion of the results of the first four hypotheses which show the students' achievement in reading between first and second application.

Discussion of the Result of the First Hypothesis

The first hypothesis says that there are no significant differences at $(\alpha = 0.05)$ in the students' achievement between first and second applications for the questioning group.

Analysis of the results provided a piece of evidence for the rejection of the first hypothesis and revealed that the use of the questioning group while teaching Tenth Grade students reading comprehension text did lead to a higher rate of comprehension. The experimental group here which used the questioning pre-reading activity scored in the reading comprehension test better than the control group students who weren't exposed to these (HOTS) strategies. This difference in the mean scores was statistically significant, in favor of the experimental group.

The rejection of the above mentioned hypothesis strongly supports the notion which considers the use of the questioning strategy as an efficient means for improving the students' achievement in reading comprehension tests. In other words, such results support the view which perceives the use of the questioning strategy as a good classroom strategy that helps students develop important language skills that will help them to improve their achievement in reading comprehension texts.

Discussion of the Results of the Second Hypothesis

The Second Hypothesis States that there is no significant at$(\alpha = 0.05)$ in the students' achievement between first and second applications for the inferring group.

The results of this hypothesis show no significant difference in the students' achievement between first and second applications for the inferring group. Thus, the hypothesis set forth in this section was accepted.

This result is also congruent with Pearson (1992) study which was conducted to determine of one of three (HOTS) strategies predicting, questioning and summarizing affected the comprehension of given fifth-grade social studies reading comprehensions.

Subjects in eight Hamilton County, Tennessee, school were used. For thirty- minute lesson plans were written for each of four lessons in the McGraw – Hill fifth grade social studies series (1995), USA. Each plan included one of the (HOTS), the given reading selection, and a post-reading comprehension test. Eight college education majors taught the lessons. The results indicated no significant differences between the test scores following the control organizing and each of the studies summarizing and significantly higher scores for the graphic organizer over the problematic situation. This result in harmony with Chen (1999) who found that students exposed to (HOTS) had a better achievement in reading comprehension than those who did not expose to it.

Discussion of the Results of the Third Hypothesis

The third hypothesis states that there is no significant difference at $(\alpha = 0.05)$ in the students' achievement between first and second application for the summarizing group. This result is consisted with Usen (1993) who indicated that (HOTS) strategy (lower level 11^{th} graders) didn't significantly result in a positive change in the students' achievement compared with other groups that didn't use any (HOTS) strategy to teaching.

However, the result pertinent to the third hypothesis doesn't agree with a study conducted by Troyer (1994) whose study emphasized the importance of using (HOTS) summarizing strategy in bringing about a positive change in the students' achievement.

This result does not match that of Tang (1992) who found that students exposed to any (HOTS) had better results in reading comprehension than students who are not exposed to the same. She also found that this strategy facilitated comprehension and immediate recall.

Accordingly, the researcher believes that teachers must employ strategies and classroom techniques that bring about positive results towards reading comprehension. The goal of reading instruction should be directed towards enhancing the students' ability in reading and comprehension.

Discussion of the Results of the Fourth Hypothesis

The fourth hypothesis says that there is no significant difference at $(\alpha = 0.05)$ in the students' achievement between first and second applications for the control group.

The findings provided a piece of evidence for the rejection of the fourth hypothesis and indicated that there is a significant difference at$(\alpha = 0.05)$ in the mean scores of the reading comprehension achievement test for both male and female students between first and second applications in favor of the first application.

The result pertinent of the fourth hypothesis is not congruent with a study conducted by Zhu (1997) who found that the experimental groups were more effective than the control group in comprehension.

The researcher attributes this result to the fact that in the second application students didn't retain much information from the first one, so they didn't overcome the effect of remembrance.

Part Two: Achievement in reading comprehension due to gender, group and the interaction between them.

This section includes discussion of the results of the 5^{th} and 6^{th} hypothesis which show subjects achievement in reading comprehension on the first and second applications due to gender, group and the interaction between gender and group.

Discussion of the Results of the Fifth Hypothesis

The fifth hypothesis states that there is no significant difference at$(\alpha = 0.05)$ in the subjects' achievement on the first application due to gender, group and the interaction between gender and group.

Analysis of the data provided evidence for the rejection of part of the fifth hypothesis which revealed that there is a significant difference at$(\alpha = 0.05)$ in the students' achievement on the first application between male and female students in favor to the former.

This result disagrees with Williams' (1984) study which indicated that gender was one of the least important variables in the prediction of the

reading performance scores. Williams added that the examination of gender differences in reading achievement usually shows varying patterns of results. In some countries, boys do better than girls, and in others girls do better than boys.

Another study which agrees with the result of the fifth hypothesis is the study of Hamed (1997) and Bakir (1996) who found out significant differences due to gender in the achievement of students in favor of females.

Discussion of the Results of the Sixth Hypothesis

The sixth hypothesis says that there is no significant difference at $(\alpha = 0.05)$ in the students' achievement on the second applications due to gender, group and interaction between gender and group.

Here the result provided a piece of evidence for rejecting the other parts of the hypothesis which deals with gender, and groups variables.

The significant differences triggered by the activity variables could probably be attributed to the idea that (HOTs) strategy activated the students' background knowledge and aroused their interests in the topic of the reading passage. Simmons,(1994) said that studies concerning the relationship between (HOTS) and reading comprehension lead to the conclusion that if readers are supplied with background information, the reading process is facilitated. Adams and Bruce (cited in Simmons, 1994) postulated that reading comprehension involves the construction of ideas

out of pre-existing concepts. A more correct statement of the role of the background knowledge would be that comprehension is the use of prior knowledge to create new knowledge. Without prior knowledge, a complex object, such as a text, is not just difficult to interpret.

Levine and Haus (1985) also pointed out that (HOTS) strategy is indeed a significant factor affecting reading performance and could be more important than language level in comprehension other materials. This result sheds light on the importance of using (HOTs) strategy as a means for improving students' reading comprehension, and consequently helping them improve their foreign language proficiency, and as a result, learning English rapidly and effectively.

This result is consistent with the findings of Qudah (1987) and Myette (1993) who found out that (HOTs) strategies had their clear effects on students' reading comprehension achievement.

So, the researcher believes that using (HOTs) strategies definitely meet individual needs and improve their learning strategies. The use of the (HOTs) strategies helps students understand the overall meaning of reading comprehension texts.

Chapter Six

Conclusions, Implications and Recommendations

In the light of these results, conclusions, implications and recommendations will be drawn and provided.

Conclusion

The results presented in this study indicated that the use of the (HOTs) strategies as a regular classroom strategy in teaching Tenth Grade students' reading comprehension texts intensively did prove to have significantly positive effects on the students' reading achievement.

The results showed that the experimental group out performed the control group on the reading comprehension test. Generally speaking, the findings of the study indicated that there were statistically significant differences between the experimental groups on the one hand as a whole and the control group on the other hand. The t-test showed significant differences at $(\alpha = 0.05)$ between the mean score of the students of the experimental groups and the mean score of those of the control group for the benefit of the experimental groups. The mean score of students of the experimental groups of the achievement test was (69.34) which was higher than the mean score of the control group (62.48).

The mean score of the experimental group was high probably due to the effect of using the (HOTs) strategies. These strategies might arouse students' interest and provide them with some questions before while and after.

It is worth mentioning here that the different groups of this study were selected on equal bases and were taught under the same conditions. Each experimental group was taught using one of the three (HOTs) strategies while the control was taught without using any (HOTs) strategy. As mentioned before, the findings revealed statistically significant differences in favor of the experimental groups. But it was noticed that the summarizing, the inferring and the questioning occupied the first, the second and the third ranks respectively on the achievement test mean scores. The most effective experimental technique in presenting the topic, motivating the students, and arousing their interests was the summarizing technique.

The Questioning strategy was the least effective technique. The oral teacher-led questioning activity which was based on the questions prepared by the researcher, did not contribute much in motivating the students and did not provide them with some background knowledge.

The findings also indicated that inferring was also an effective strategy in comparison with the control group.

In conclusion, the combination of more than one strategy results in a more effective and yields better reading comprehension results. The questioning strategy could be combined either with the summarizing or with the inferring. Inferring could also be combined with the summarizing.

The findings revealed that boys totally achieved higher mean scores than girls on the reading comprehension achievement test. These statistical

differences were significant. The statistical analysis showed that male students responded better to the practiced technique. This was unexpected because both male and female students who participated in the experiment were of the same age and they had the same educational, social and economic background.

Moreover, the teachers who participated in this study have almost the same qualifications and teaching experiences. They were holders of BA degrees in English language, with teaching experience ranging between 5 to 10 years.

Moreover, the schools where the experiment was conducted had similar teaching/ learning facilities.

In general, the subjects of the study had almost the same teaching/ learning conditions. It is also worth mentioning that parents in Jenin society deal with their children on equal bases regardless of their gender. The findings of the study also revealed no significant differences in students' reading comprehension achievement test scores due to the interaction of group or activity with gender. In the researcher's opinion, the reason behind that was the short period of time within which the experiment was conducted. That short period of time did not allow the interaction to take place. In addition to that reason, the use of only one reading passage weakened the possibility for gender to interact with activity. It was also noticed that the subjects of the study achieved low mean scores on the reading comprehension achievement test. One of the main reasons behind

that was the low language proficiency of the subjects. It was noticed that both male and female students got very low scores on the cloze test which was a part of the reading comprehension test.

The findings of this study revealed three main points: The first focuses on improving students' language proficiency which surely includes getting students to be more acquainted with the language skills and language components. The second includes urging teachers to train their students on the different skills (writing, speaking and listening). The third emphasizes using (HOTs) strategy as a means of activating students' knowledge of the reading topics, motivating them and arousing their interests.

Implications

The following implications can be drawn for reading instruction depending on the findings of the study:

1. Teachers can help students comprehend a text by creating conditions under which appropriate knowledge is brought to awareness and applied. This permits a link between text concepts and past experiences that may give the learner appropriate hints about the language and content of the text.

2. Teachers are recommended to try a variety of (HOTs) strategies in order to use the most suitable one for their students for each teaching situation. In this study three (HOTs) strategies were experimented: the

questioning, the inferring, and the summarizing strategy. Each group using one of these strategies proved to be more effective than the control group. So, teachers can try any one of these or any other strategies. In addition to the three strategies adopted in this study, teachers can try some other ones, prediction, or a combination of two or more of them. A teacher may look for the (HOTs) technique that is suitable for his students that can motivate them, arouse their interests, and activate their knowledge all the time during the class time. In addition to this, teachers can introduce key words to give their students a hint about the text or to provide them with brief background introduction to the text.

3. English language teachers should help their students improve their total language proficiency in order to exploit whatever knowledge or resources (linguistic, schematic, etc.) they may have. Richard (2002) states, "proficiency refers to the degree of skill with which a person can read, write, speak, or understand language". All these skills are interrelated, and each one of them supports the other. But reading as indicated by this study is the most important skill. Reading does not only depend on linguistic knowledge (Phonetic, syntactic, semantic, etc.), but also on cultural, social, psychological, religious elements …etc. Consequently, effective reading comprehension depends not only on the reading matters, but also on the degree of experimental input and motivation as well.

4. English language teachers should also have in mind that their focus should not be so much on the reading product but on the process. They should know that reading includes the creation of meaning from the text, rather than focus on word-for-word deciphering. Therefore, teachers should always train their students on the different reading skills such as skimming and scanning.

If English language teachers pay special attention to the (HOTs) strategies, apply the steps before, the while and the post reading stages properly, train their students on reading skills, and if they always try to improve students' general language proficiency, they will surely have fast readers and good level of comprehension.

Recommendations

The researcher considers students' deficiency in reading comprehension as an acute and serious problem. Therefore, in light of the findings of this study, she believes that the following recommendations are of direct relevance and help for the Ministry of Education, teachers and researchers.

1. Teachers are advised to give more emphasis on (HOTs) strategies which surely helps to motivate students and activate their prior knowledge when employed skillfully and appropriately.

2. Teachers are also recommended not to stick to only one (HOTs) strategy but always try a variety of strategies and adopt the most suitable (HOTs)

strategies for their students and/or for the different types of reading selections.

3. Teachers should train their students in the various reading skills to enhance the students speed and promote their level of comprehension.

4. The Ministry of Education should provide teachers of English regularly with printed training materials which display techniques and teaching strategies used in teaching English as a second/foreign language.

5. Researchers should be encouraged to investigate the effects of other (HOTs) strategies other than the ones investigated in this study.

6. Researchers are recommended to conduct similar studies on other classes at other levels and in other areas and environment.

7. Practice workshops training teaches on how to train student on make (HOTS) strategies.

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Appendices

Appendix A

The Reading Comprehension Passage

Reading

The Sea That Died

Lakes are going through bad times worldwide. Modern farming is taking water from the rivers that feed lakes. Farm chemicals are also getting into the water and polluting it. These changes can bring terrible disaster. The Aral sea, in the old Soviet Union, is one such disaster.

The Aral Sea was the fourth-largest freshwater lake until the 1960s. People lived well from the successful fishing and local farming industries. This would have continued if the Moscow Government had not introduced a huge and sudden change. The planners suddenly decided to turn the region into a major cotton producer. The government needed money, and cotton sells well internationally.

However, cotton is thirsty, and the region is dry. Water was needed from the two large rivers that feed the Aral Sea. Soon, more and more water was being taken from them for irrigation. Increasing amount of farm chemicals were also being used. These started getting into the rivers, the lake and groundwater and polluting the whole environment.

The planners should have thought about the effects on the Aral Sea, but they cared only about the white gold. If they had thought, they would have seen the dangers, and at that time, they could have stopped. However, they did not, and one of the world's greatest environmental disease followed.

By 1983, all the river water was being taken. The rivers were dry, and the Aral Sea was also evaporating. Soon, the water was too salty for anything to live. The fish died, and the fishing industry, too. Over 60,000 fishermen lost their jobs. The lake was also shrinking. Today, it is two-fifth of its old area and just 15% of its original volume. Hundreds of rusty fishing boats lie on the old seabed, many kilometers from water.

There have been other disastrous effects. Strong winds blow salty, polluted dust from the seabed across the land. This and the polluted water are causing cancer and other killer diseases.

Many children are also being born with physical defects.

Now the cotton itself is dying. The irrigation water brings salts and these remain in the ground. The salts cover the plants' roots and kill them. The land is dead.

The planners could and should have foreseen what would happen. If they had, they might have thrown away their plans.

Appendix B

The Reading Passage Key Words

Key Words:

1- ***Region*** = a large area of land, desert, tropical, polar, etc. regions.

2- ***Irrigation*** = supplying land with water by means of pipes.

3- **Polluting** = the act of polluting.

4- **Environment** = the natural world, e.g. land, air, water, in which people, animal and plants live.

5- **Evaporating** = changing into steam or gas and disappear.

6- **Shrinking** = become smaller.

7- **Volume** = the amount of space that something contains or occupies.

8- **Rusty** = covered with rust: rusty tins.

9- **Defect** = something that is wrong with or missing from somebody/ something.

10- **Roots** = the part of a plant that grows under the water and food from the soil.

11- **Foreseen** = to know or guess that something is going to happen in the future.

12- **Cancer** = a very serious disease in which lumps grow in the body in an uncontrolled way.

Appendix C

The Questioning Strategy

Questioning Strategy

The teacher leads a discussion depending on the questions below so as to motivate his students and to present the topic of the reading selection.

1. What is the lowest point beneath the sea level? Can anything live in it? Why?

2. Have you ever been to a river / a sea?

3. Which see have you ever been to?

4. Where is it?

5. What benefits can we get from seas?

6. What are the most important industries that people can get from seas?

7. Describe the photo in the lesson?

8. From the photo, the map and the title of the text on p.79 guess what has happened?

9. What do you think our reading passage today is about?

10. Find similarities and differences between the Aral Sea and the Dead Sea?

Appendix D

Inferring Strategy

Inferring Strategy

The teacher gives his students enough time to read silently and then answer some general questions.

1. Hypothesize what will happen if the planners could have foreseen what would happen?

2. Predict what will happen if the planners have thrown away their plans?

3. Solve the problem as if you were in the planners' position.

4. While reading paragraph one predict how the text will end.

5. What is the main idea of the text?

6. What is the overall theme of such a text?

7. Based on your readings, what can you conclude about the information listed in the text?

8. What is the authors' point of view?

9. What generalization can you make from this information?

10. Create a solution for this problem.

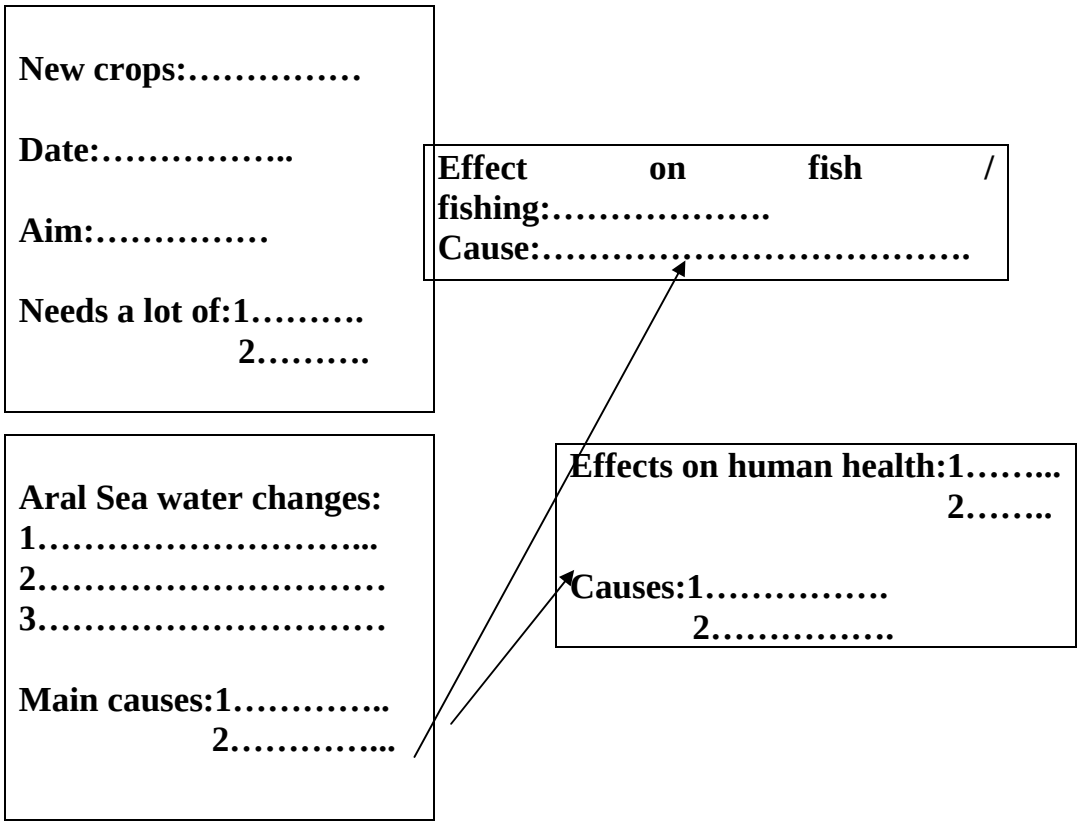
11. Design a plan for any future problem like this.

Appendix E

Summarizing Strategy

Summarizing Strategy

Complete the diagram with brief notes, then expand your notes to write a summary paragraph.



Students write their summary and start like this:

Cotton was introduced in the 1960s to sell internationally for money. However, cotton needs a lot of.....

Appendix F

The Reading Comprehension Test

Worksheet

The truth about water. Can you guess the answers?

What do you know about water?

1. About ……. Of all the earth's water is salt water in the oceans.

a. 97% b. 73% c. 55%

2. Approximately …….. Of all fresh water is in the form of ice or snow.

a. 34% b. 51% c. 77%

3. Over ……. more water is used by the world today than in 1960.

a. 50% b. 80% c. 100%

4. Roughly …… of the world's people are often badly affected by shortage of water.

a. 2% b. 21% c. 33%

5. Our bodies are made up of many solid materials, but are around …… water.

a. 95% b. 45% c. 15%

Reading Comprehension Achievement Test

I. Choose the best answer according to the reading passage:

1. Modern farming derives water from…….

a. lakes c. seas

b. rivers d. streams.

2. The Aral Sea lies in the ……..

a. New Soviet Union b. Moscow

c. Europe d. Old Soviet Union.

3. The Planners suddenly decide to turn the region into ……..

a. a major rice producer b. a major cotton producer

c. a major wheat producer d. a minor cotton producer.

4. the Aral Sea was the World's …….. Until 1960s.

a. second – largest freshwater lake b. third-largest freshwater lake.

c. fourth – largest freshwater lake d. first–largest freshwater lake.

5. The underlined word (line 9) means:

a. land b. road

c. way d. desert

6. The pronoun <u>them</u> (line 13) refers to:

a. farmers b. people

c. lakes d. rivers

7. By 1983, all river water was being ……

a. dried b. shrunk

c. evaporated d. taken.

8. Many children are also being born with:

a. physical defects b. cancer

c. disease d. mental defects

II. Write <u>True</u> or <u>False</u> in the space in front of each statement below:

1. **…… cotton doesn't need water to grow well.**
2. **…… the Aral Sea was the World's fourth – largest freshwater lake until the 1960.**
3. **…… people lived well from the successful fishing and local framing industries.**
4. **……The scientists suddenly decided to turn the region into a major cotton producer.**
5. **…… Many children are also being born with physical defects.**
6. **…… Modern farming, is taking water from the rivers that feed lakes.**
7. **…… In 1938, all the rivers water was being taken.**

III. Answer the following questions:

1. **How did people live in 1960s?**

……

2. **What two things have caused the Aral Sea to shrink and become very salty?**

a……..

b……

3. **Why over 60000 fishermen lost their jobs?**

……

4. **What new crop was introduced? When?**

……

5. **How many disasters have followed? What are they?**

……

6. **What did the planners decide to turn the region into? Why?**

……

7. **Did the Aral Sea also evaporate? Explain.**

……

IV. Complete the sentences below using one of the following words (Note: there is one word than is needed).

1	2	3	4	5	6	7	8
shrink	**major**	**government**	**foreseen**	**increasing**	**groundwater**	**cancer**	**volume**

1. **The planners didn't ……. the coming disaster.**
2. **The lake …… in the hot, dry summer months, then it grows again when the winter rain comes.**
3. **The Palestinian …… has recently built many schools in Palestine.**
4. **Suddenly, region was turned into a …… rice producer.**
5. **Now, most scientists think that temperatures are ……**
6. **About 27% of all water that is fresh is ……**
7. **Polluted water and polluted dust from seabed are causing ……..…… and other killer disease.**

Cloze Test

In the following paragraph, 10 words have been deleted. Read carefully, and in each space insert whatever word makes sense to the whole meaning of the paragraph.

Modern farming is taking water …….. the rivers that feed lakes. Farm chemicals are also getting into the …….. and polluting it. These changes can bring terrible …….. People lived…… from the successful fishing and local farming industries. This would have

continued if the Moscow Government hadn't introduced a …… and sudden change. The planners suddenly decided to turn the …… into a major cotton producer. The government needed…….., and cotton sells well internationally……., cotton is thirsty, and the region is dry. Water was needed from the two large …… that fed the Aral Sea. Soon, more and more water was being taken from them for …….. Increasing ……..of farm chemicals were also being used.

Appendix G

The Answer Key and the Scoring Scale

Answer Key

Question One (Multiple Choice)

1. a	**2. d**	**3. c**	**4. b**
5. d	**6. c**	**7. b**	**8. a**

Question Two (True/ False)

1. F	**2. F**	**3. T**	**4. F**
5. T	**6. F**	**7. T**	**8. F**

Question Three (Answer the following questions).

1. People lived well from the successful fishing and local farming industries.

2. a. Cotton is thirsty, water was needed from the two large rivers that feed the Aral sea.

b. More and more water was being taken from them for irrigation.

3. The water was too salty for anything to live. The fish died, and the fishing industry too, so over 60.000 fishermen lost their jobs.

4. Cotton, in 1960s.

5. Two disasters are followed: a. strong winds blow salty, polluted dust from seabed across the land. b. Many children are also being born physical defects.

6. The planners decided to turn the region into a major cotton producer, because the government needed money and cotton sells well internationally.

7. Yes, it evaporated, because the rivers were dry the lake was also shrinking.

Question Four (Filling Gaps)

1. foreseen **2. shrinks** **3. government** **4. major**

5. increasing **6. groundwater** **7. cancer**

Questions Five (Cloze Test)

1. from **2. water** **3. well** **4. huge**

5. region **6 money** **7. However** **8. fed**

9. irrigation **10. amounts.**

Question No.	**Grades.**
-One	8*3=24
-Two	8*3=24
-Three	7*3=21
-Four	7*3=21
-Five	10*1=10
Total	**100**

Question No	Grades
One	8×3 = 24
Two	8×3 = 24
Three	7×3 = 21
Four	7×3 = 21
Five	10×1 = 10
Total	100

جامعة النجاح الوطنية
كلية الدراسات العليا

دمج إستراتيجية مهارات التفكير العليا على مستوى الاستيعاب القرائي لدى طلبة الصف العاشر الأساسي في مدارس محافظة جنين

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قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في أساليب تدريس اللغة الإنجليزية في كلية الدراسات العليا في جامعة النجاح الوطنية في نابلس، فلسطين.
2011م

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الملخص

إن تدريب الطلبة على القراءة المعبرة والممثلة للمعنى من الأمور المتفق عليها بين العديد من التربويين. إن تنمية حب القراءة عند الطلبة وربطهم بالكتاب هي مهمة المدرسة والأسرة.

إن مهارة القراءة تعد من أهم المهارات التي ينبغي أن تعطى اهتمام كبير في مدارسنا في فلسطين.فالطالب لا يجب أن يتوقف عند حد معين من القراءة. فكثير من الطلبة غير مدركين إلى آلية القراءة السليمة واستراتيجيات تعلمها. و كنتيجة لذلك قامت الباحثة بدراسة هدفت إلى قياس أثر استخدام إستراتيجية مهارات التفكير العليا على زيادة القدرة الاستيعابية للطالب من خلال الإجابة عن الأسئلة التالية:

1. هل يوجد فروق ذات دلالة احصائية عند مستوى الدلالة الفا=(0.05) في تحصيل الطلبة بين المجموعة الاولى و المجموعة الثانية التطبيقيتين يعزى الى استخدام استراتيجية دمج مهارات التفكير العليا.

2. هل يوجد فرق احصائي في تحصيل الطلبة في المجموعة الضابطة بين التطبيقين الاول و الثاني.

3. هل يوجد فرق احصائي في تحصيل الطلبة في التطبيق الاول يعزى لتغير الجنس, المجموعة, والتفاعل بين الجنس والمجموعة.

4. هل يوجد فرق احصائي في تحصيل الطلبة في التطبيق الثاني يعزى لتغير الجنس, المجموعة, والتفاعل بين الجنس والمجموعة.

وللاجابة عن أسئلة الدراسة قامت الباحثة باجراء دراسة تجريبية باختيار قطعة قراءة مناسبة وأعدت استراتيجية مهارات التفكير العليا المطلوبة, ثم اعدت الاستيعاب القرائي التحصيلي.

وقد تم تدريس كل مجموعة تجريبية تبعا لاحد استراتيجية مهارات التفكير العليا (الأسئلة, والاستدلال, والتلخيص). بينما درست المجموعة الضابطة دون استخدام اي استراتيجية من مهارات التفكير العليا, ومن ثم طلب من طلاب كافة المجموعة الاجابة عن أسئلة امتحان القراءة التحصيلي.

ولوصف وتحليل البيانات التي توفرت استخدمت الباحثة اختبار "ت" واختبار تحليل التباين الثنائي, وكذلك استخدام المقارنات البعدية (شيفيه).

وأشارت نتائج الدراسة الى وجود فروق ذات دلالة احصائية لصالح المجموعات التجريبية التي درست باستخدام مهارات التفكير العليا, وأشارت ايضا الى وجود ثبات في التحصيل بين التطبيقين الاول و الثاني. وأظهرت وجود فروق احصائية في علامات الاختبار التحصيلي تعزى لمتغير الجنس, وعدم وجود فروق احصائية تعزى للتفاعل بين الجنس و الاستراتيجية.

وفي ضوء هذه النتائج فقد اوصت الباحثة المدرسين بايلاء استراتيجية مهارات التفكير العليا عناية اكبر من خلال استخدام عدة استراتيجيات ملائمة, وكذلك اوصت الباحثة بمزيد من البحث للتحقق من أثر استراتيجية اخرى على مهارة الطلاب في الاستيعاب القرائي.