Enhancing Students' Reading Comprehension Through Dense Questioning

The Case Of First Year Secondary School Students at Zeyn El Hedj Belkassem

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Master in Language Sciences and Teaching English as a Foreign Language

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Dedications

In the Name of Allah, the Most Gracious, Most Merciful, All the
Praise is due to Him alone, the Sustainer of the entire World.

The first thank is to Allah almighty that has provided me with efforts
to accomplish this study. I dedicate this work to:

To my first and finest teachers, Mom and Dad

To my sisters and brothers the roses of my life for their love,
support and understanding: Mohamed, Rachid, Naima, Nour
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Abstract

This study aimed at investigating the effectiveness of the dense questioning strategy on secondary school students' reading comprehension. It attempted to answer the following question: Does the dense questioning strategy improve the’ reading comprehension? Forty students in secondary school–Zeney Elhedj Balkasem were randomly chosen in the 2nd semester of the academic year 2012/2013. The participants of the study consisted of two assigned groups receiving the pre-test for the reading comprehension. The prepared reading materials was taught based on the dense questioning strategy for the experimental group; while the control group was taught the same reading texts followed by questions about the text only. At the end of the experiment, the post-test was administered to both groups. The results revealed that there is a significant difference on the experimental group’ reading comprehension; however, the strategy failed when we compare both control and experimental group scores on the post-test. The study also includes a number of recommendations and suggestions for future research.

Key words:

Dense questioning, reading comprehension, Socratic seminar, wait time, dense questions.
List of abbreviations

-EFL: English as a foreign language

-i.e.: Example

-Q.T.A: Questioning the Author
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RÉSUMÉ

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Introduction

Reading is a multifaceted process involving word recognition, comprehension, fluency and motivation. It plays an important role in learning foreign languages by reinforcing the other skills to be improved like the writing skill. As a third skill reading aims at comprehending and driving meanings from what is being read either a simple text or an entire book. So, to read means that there is a target to be achieved which is in turn requires a thoughtful interplay between the reader and the text.

Statement of the problem

The purpose of reading is comprehension. Many teachers notice that their learners face difficulties while reading texts, especially when the teacher asks them different questions in relation to the text; they show lack of understanding, in particular, when they are exposed to a new topic without any background knowledge. So, they cannot understand what they are reading. Moreover, learners show less interest toward a specific text when it is irrelevant to their interests, not related to their daily lives, experiences and the world around them. So this study is suggested to meet and suits the learners and their needs.

Aim of the study

The aim of this study is to examine whether or not the dense questioning strategy would enhance students’ reading comprehension.

Research question and hypothesis

This study addresses the following question:

Does the dense questioning strategy enhance students reading comprehension?
It is hypothesized that students who are asked dense questions would show a better improvement in their reading than those who are not.

**Research means**

As a mean to carry out this study, the pre-test, treatment and post test were applied. First of all the administration of the pre-test took place before any treatment to both groups to assess their level on reading comprehension. The experimental group experience the dense questioning strategy by responding to the teacher’ questions about different passages for many sessions, however, the control group was studying the same texts in an ordinary way. Both groups the experimental and the control group receives the post- test to see the difference in their reading comprehension.

**Structure of the Study**

This study consists of two main chapters. The first Chapter is devoted to the theoretical part which is composed of two sections, the first section is about reading comprehension, its strategies, levels and way to assess it. The second section is about the dense questioning strategy tackles the questioning techniques namely the wait time and Socratic seminar, the importance of questioning on EFL classes and questioning in reading with different types ,whereas the dense questioning is tackled in details by mentioning the definition, description and dense questions.

The second chapter is devoted to the analysis of the experiment. The research design, procedure, the instruction of both groups and the statistical analysis are worthy discussed to end up with general conclusions and suggestions for further studies.
CHAPTER ONE: THEORITICAL BACKGROUND

Section one: Reading comprehension

Introduction

1.1.1. What is reading comprehension

1.1.2. The importance of reading in the E.F.L classroom

1.1.3. Reading comprehension strategies

  1.1.3.1. Monitoring

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**Introduction**

Reading is one of the four skills with great importance in foreign language classes. Reading actually aims at reaching comprehension whatever the material is, simple text or a book. This chapter tackles reading comprehension and how it can be used successfully by teachers and students, there is an attempt, at this point, to provide some definitions of the concept. Different strategies and skills will be tackled and clearly explained by illustrating many view of different authors. Measurements and ways of assessing the reading comprehension will be explained and supported by authors’ views.

1.1.1. What is reading comprehension

Reading anything in front of us means that we are looking at series of written words and symbols to get meaning from them. According to Ibrahim (1979) reading is” an act of information processing”. She adds that the "total comprehension of a reading passage involves the skill...to extract [the ideas] …and the organizational pattern the author has used to express his ideas." (p.187). Reading is certainly not a simple skill but a cognitive process comprising a complex set of interrelated skills like drawing conclusions after reading a text.

Reading for ideas and seeking for more knowledge about the subject matter may be defined as looking for the author's explicit and implicit ideas, which require a total concentration from the reader.

Reading is the recognition of words and meaning stated by the writer. but as part of a text or a passage. Recognition of the exact word is not enough on its own to form reading.
Many researchers agree that reading different materials whether they are small passages or a long ones like novels, enlarge the repertoire of the students especially when they are reading different topics in different fields.

Reading aims at reaching comprehension which is the ultimate goal of any reading activity, researchers in the field gave various definitions to it. Pearson (1978) said that “reading comprehension is a process that can be noticed only ‘indirectly’ “(p.50) .It is not clear by itself and there are other means to see the process and cover it when a text is present to be read and well understood.”Reading comprehension is a collective term that describes the result of grasping the meaning from a text with one’s intellect—a task that involves many skills”(Snow,2002,p.2). Snow (2002) argues that:

reading comprehension is the process of extracting and constructing meaning through interaction and involvement with the written language .The use the words extracting and constructing to emphasize both the importance and the insufficiency of the text as a determinant of reading comprehension. Comprehension entails three elements: the reader who is doing the comprehending, The text that is to be comprehended, the activity in which comprehension is a part (p.11).

Pearson (1978) gives reading comprehension a characteristic of being seen indirectly “reading comprehension is a process that can be noticed only ‘indirectly’ “.It is not clear by itself and there are other means to see the process and cover it when a text is present to be read and well understood .
1.1.2. **The importance of reading in the E.F.L classroom**

Reading in the second language plays a big role in developing EFL learners’ level. It is evident that learners benefit from reading sessions from many sides, firstly, they acquire new vocabulary that may enlarge their repertoire of the target language and to be used to develop the other skills like speaking. Second, during reading sessions learners are exposed to the formal language of native speakers which allows them to develop their style of writing and allows them to be good writers. Third, the importance of reading in EFL classes is not restricted to developing the level of students in the target language only, it goes beyond that to be an effective tool in raising students motivation, discussion during classes.

1.1.3. **Reading comprehension strategies**

According to Rand reading study (2001), achieving reading comprehension the reader makes use of many skills such as identifying the main idea of a passage, summarizing the content of a text, posing questions about the information in the text and looking for key ideas that answer those questions. Many other strategies and skills will be covered later on in this chapter like drawing inferences from the text and perhaps even monitoring, self-monitoring, drawing conclusions processes presented in it in order to achieve comprehension.

“A reading comprehension strategy is a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension” (Namara, 2007,p.6). Reading comprehension strategies facilitate the process of reading any text for learners. Willis (2004) said that”
strategies to build comprehension are available to increase neural efficiency at each step of the comprehension process” (p.127).

For many teachers finding the exact strategy to deepen the comprehension is a skill in itself, because comprehension is not an easy goal to be achieved. Here is some strategies that might be helpful for teachers and students.

1.1.3.1. Monitoring

“Monitoring is a process of talking to oneself about whether the meaning being encountered is the meaning anticipated—that is, whether the original prediction is coming true”(Duffy,2009,p.107). The reader begins to ask himself about what new prediction needs to be made, by giving the new information mentioned in the text. Monitoring looks like the questioning strategy, both are considered as processes in which the reader talks to himself about whether the meaning makes sense. About both strategies questioning and monitoring. Duffy(2009) explained that they are approximately the same, because questioning is also a process of talking to oneself about whether the meaning makes sense. That is, the reader is constantly asking, “Does this make sense? Is this what I had predicted was going to happen?” If the answer is “No,” the reader says something like, “Given what I’m reading here, and my prior knowledge about information like that, what must I now predict is going to happen?”(Duffy,2009,15).

“Monitoring must be continuous throughout the reading process. Readers who wait until they reach the end of the text before they realize they have no idea what it means have wasted time and effort by continuing long past their loss of comprehension”(Moreillon, 2007,p.116). There is no simple way for readers to master monitoring. In addition to that monitoring strategy has a positive effect on readers’ understanding of the text.
Morellion (2007) said that researchers found positive effect as well as increased comprehension awareness as a result of their treatment, i.e. monitoring and the coming study will clarify the positive effects of monitoring. Similarly, Block (1992) made an examination to comprehension monitoring among second-language readers of English who were Chinese- and Spanish-speaking. She found that monitoring appeared to be correlated more with reading than with native language background, implying a strategy of monitoring unique to second-language processing and distinct from first-language literacy. As a researcher in the domain Chi(1995) taught readers strategies for relating texts to previously read texts and found that such strategy training produced more reflective responses to texts, although whether the strategy work actually enhanced comprehension remains unpleasantly.

“Comprehension monitoring is often assessed by requiring readers to detect inconsistencies in text, such as scrambled sentences, contradictory sentences, or statements that conflict with readily available general knowledge”(Namara,2007,p.49).The monitoring strategy seems to be a difficult one; however it is among the best strategies that promotes the deep understanding to readers as Yang (2002) argues for comprehension monitoring as a top strategy for proficient L2 readers.

Monitoring is done by learners using the self-monitoring, according to Willis (2008) the Self-monitoring requires students to learn to stop to take notes of the words they do not understand or parts of the notes that don’t make sense. Students can use or signals from teachers to stop at or at appropriate breaks in chapters or subchapters to monitor their own understanding. Through instruction, modeling,
and practice, students can also be taught to stop to construct images and depend on
the existing ideas that make sense. Teaching students to do self monitoring
improves their level in reading comprehension and it is a part of monitoring.

1.1.3.2. Predicting

Predicting is one of the reading comprehension strategies which is
fundamental to comprehension.” Good readers anticipate meaning and what’s
coming next. They do this by predicting what they think is going to happen in the
selection and by revising their predictions as they read”. (Duffy, 2009,p.101)
Readers of all ages make predictions as a first step before continuing reading the
whole text or passage, about this point Duffy (2009) argued that more proficient
readers make predictions when they are reading expository text.

Predictions are based on the use of the prior knowledge, to predict is to think
about the text from your vision and background. Tovani (2000)said that when the
reader sees the title of a selection or looks at a picture on a cover or reads a first
line, prior knowledge is activated and, on the basis of that prior knowledge,
predictions are formed about what is to come.

1.1.3.3. Inferring

Many teachers found difficulties explaining what an inference is. Teachers
consider it as a complicated strategy to be taught. “Inferring is abstract thinking,
something readers do in their head when they are reading beyond the
words”(Tovani,2000,p.100). Inferring requires that the reader uses an appropriate
amount of background knowledge from different experiences he passed through
and thoughts he builds from the environment. The use of prior knowledge and
textual clues to draw conclusions and form unique interpretation is the core of the
inferring strategy, in which reading between lines and reflecting on reading is highly activated. To sum up, readers use clues from the text, with what is already known for them about the world and put this information together to understand something in the text that the author has not directly told them. Inferring can help readers to think deeply, keep them interested in what they are reading and make them imagine, about many idea.

The outcomes of inferring are different and covers many areas, for example readers who infer can draw conclusions about their reading by connecting the text with their background knowledge, synthesize new ideas and information, create unique understandings of the text they are reading. Moreover, student who infer can extend their comprehension beyond literal understandings of the text, Make predictions about the text, confirm or disconfirm those predictions based on textual information, and test their developing comprehension of the text as they read(Keene,2000).

1.1.3.4.Summarizing

Summarizing is the creation of a brief retelling of a text. “While it may include the main idea or theme, the focus is on describing in brief form the text’s major points”(Duffy,2009,p.135). Summarizing connects reading and memory by linking understanding of text to remembering. This strategy makes sense as a warming-up before beginning the other strategies for several reasons because some strategies are not related to the brain. For example, students may not have done the reading homework, or they may have special needs that benefit from summaries of what was read.
Willis (2008) believes that summarizing can help students at all levels of comprehension when it precedes the class discussion about other parts of the text analysis (Willis, 2008, p132). The class discussion can be organized so students can contribute to summaries at their individual comprehension and language levels. If teachers structure these summaries discussions by selecting or encouraging volunteers, whom they believe will describe the basic outlines before they call on students who is knew will add depth to the summary.

Summarizing is used in the main ideas strategy lessons as well as in reflective paragraphs in lessons in other chapters. Note taking is used during the lessons. Drawing pictures, creating graphs, and kinesthetic or tactile activities are three types of nonlinguistic representation students use to show their learning in the sample lessons. Readers’ role play cooperative strategies and students engage in cooperative learning in many lessons. The idea behind using all of these strategies is to prepare the learner to make summaries either learning the strategy alone or by working cooperatively with his classmates in order to benefit from one another.

1.1.3.5. Drawing conclusions

As with so many comprehension strategies, drawing conclusions is another example readers do as they read. That is, when reading a text, readers ask themselves what the author wants them to be thinking at that point. “Readers should draw conclusions when reading both narrative and expository texts, and the strategy can be taught in both listening and reading situations, whatever the grade level”(Duffy, 2009,p.161).

In drawing conclusions strategy, the authors want readers to draw conclusions, even though they may not say so explicitly or do not specify exactly
what conclusion should be drawn. Besides that, readers must be creators of meaning. When readers draw conclusions they are approximately making a prediction; however, this prediction is about what the author wants the readers to conclude.

1.1.3.6. Evaluating

Evaluation is the ability to make judgments about ideas and concepts being read (Karen, 1952). To evaluate information means being able to distinguish between what is essential and what is not or it might mean being able to extract an idea from an opinion which is stated. As a reading strategy Karen (1952) considered it as a sophisticated thinking strategy, but it can be learned at all grade levels.

Duffy (2009) mention that students, for instance, can begin evaluative thinking in listening situations. In the upper grades, evaluative thinking becomes more complex. Students learn to discern when an author is trying to influence their opinions through the use of propaganda or other rhetorical devices, and they learn to go beyond the boundaries of the text, bringing world knowledge to bear on what has been read in order to appraise, critique, or choose alternative conclusions. (ibid.)

Evaluating is particularly important in today’s “Information Age.” We are engaged in listening, viewing, and reading situations with information to influence us in one way or another. Duffy (2009) stated that the old saying about “not believing everything you read” (or everything you hear, or everything you view) is more important than ever. Consequently, evaluating is a crucial comprehension strategy.
The objective behind applying the evaluating strategy by most of the teachers is to enable students to communicate, evaluate, determine and value what is read based on stated criteria. All in all the student here communicate what readers judge, justify, and/or defend their understandings by applying criteria such as importance, accuracy, credibility, usefulness, appropriateness, and personal enjoyment to information obtained from the text and from their lives.

1.1.3.7. Synthesizing

“synthesizing main ideas is a more complex process that involves a more global understanding of a text” (Namara, 2007, p.478). Synthesizing is creative. That is, readers must create an understanding from a variety of sources whether it is a simple text or a book contain many different passages. Synthesizing requires that readers use the strategies offered in this book to read, to evaluate, and to use ideas and information in which the reader can combine ideas from the text. For instance, students could create a new story character as Duffy (2009) stated that, synthesizing involves combining ideas across texts; students synthesize when they use what they have learned about the topic. Consequently, synthesizing is learned best when it is situated within a problem focus in which students are engaged in resolving an issue or in taking action.

Cammille (2009) stated that synthesizing can be done in a reasonable form at all grade levels and using sources other than narrative text. For instance, first graders studying plants could read an expository text and view a video about it. Then they could combine the two together into a list of things.

Morecillion (2009) stated that the more common practice of this strategy, particularly from a school library perspective, involves bringing together information from several sources. As readers synthesize, they sort and evaluate
information. They may find agreement among texts, or they may encounter conflicting “facts.” Synthesizing, like determining main ideas, requires that readers make value judgments.

Synthesizing is a higher-order thinking skill. Synthesis is the process of learning from others’ ideas and transforming those ideas through analysis and interpretation to offer a new meaning. Through synthesis, the learner makes information and ideas of his own. Some examples of verbs associated with synthesizing are construct, design, devise, formulate, imagine, invent, and propose. Each of these actions suggests that the learner goes beyond the facts to suggest his own ideas, to offer his own interpretations (ibid.).

The objective behind using the strategy of synthesizing is to enable students to define primary and secondary sources, take notes and record sources. Synthesizing the information format like having at least three sources and design a product to show that they have learned and they can assess with the use of check lists.

1.1.3.8. Skimming

Skimming is the type of reading which students engage in with the purpose of getting a general idea of the material. In skimming the reader goes through a text quickly, not noting every word but trying to get the main idea of what the text is about. This is sometimes called getting the gist of the text (Hinkel, 2009). Ibid said that the ability to skim a text is a useful skill because skimming can be used to help decide if a text or section of a text deserves careful reading. Skimming activities should involve texts which are at least 2,000 words long and which are on topics that the learners are familiar with. Comprehension should be measured by questions
which ask “What was the text about?” Multiple-choice or true/false questions which focus on the gist of the text could also be used. (ibid.2009,p.70)

Skimming is used when learners want to survey a chapter in a textbook or when they want to determine whether this chapter is useful for their purposes. (Meknes, 1985) argued that In this type-of reading, the details are not taken into consideration and it is, instead, the main idea that interests the reader. It is a skill which is especially needed at the college level where reading in the foreign language becomes more content-oriented. It includes other many strategies like looking at the title, the heading and subheadings, Identifying the topic sentence, and paying some attention to the typographical devices that are used to emphasize key information (italics, underlining, words in bald characters etc.

1.1.3.9. Scanning

Scanning is somewhat the opposite of skimming. The purpose is to locate specific information. Makenes (1985) mentioned that:

Practice in this skill can be straightforward. The students can be given specific questions and then asked to locate the answers to them Questions which require scanning for specific information can be incorporated in any reading lesson. The questions can be of the type exemplified in the post-reading stage of the Directed Reading Thinking Activity.(p.23)

Hinkel(2009) said that scanning involves searching for a particular piece of information in a text, such as looking for a particular name or a particular number. It is probably better to spend time increasing skimming speed than to devise scanning activities. This is because effective scanning depends on good careful reading and skimming skills, and training in scanning is unlikely to result in more fluent access to items
1.1.3.10. Putting all the strategies together

Duffy (2009) stated that Comprehension is an active cycle of mental activity. It starts when readers anticipate meaning by predicting ahead of time what they will find in a passage. But predicting is only the beginning of the process of seeking meaning. As readers move into the text, they monitor, they question, and, when necessary, they abandon the prediction they made earlier and make a new prediction. In short, good readers do not sit back and passively wait for meaning to come to them. They talk to themselves about the meaning they are building. Because all the strategies—monitoring, questioning, and predicting, synthesizing and drawing conclusions—happen together, they are taught together.

In sum, monitoring, questioning, synthesizing and predicting are the strategic heart of the comprehension process. But this three areas of thinking is difficult to teach. First, the process not only happens in a flash, it also is invisible. Second, it is personal—students cannot exactly mimic what you do because the process depends on individual prior knowledge. Third, it is tentative—predictions are made and then must be abandoned and replaced by new predictions. Finally, it takes energy—readers cannot coast along passively.

1.1.5. Levels of reading comprehension

There are many ways to think about levels of comprehension. Hetzel (2000) said that one of the easiest ways to think about comprehension is to consider three layers: on the lines, between the lines, and beyond the lines.

1.1.5.1. On the lines

“On the lines” comprehension reflects a person’s ability to recall the basic facts of a passage” (ibid., p.5). Good readers tend to remember what they studied in text even after a long time, it is because they have the ability to understand facts
when they are exposed to them and recall them again. When readers read a passage, very basic and important details can be memorized and then returned when it is necessary to be present.

1.1.5.2. Between the lines

Having the ability to make inferences is an ability known as “between the lines”. Many writers want the reader to think about what is stated in their texts or passages, they want from the reader not only to read; however, they want them to extract opinions from facts that exist in the text. Hetzel(2000) clarified an example about the inferences the learners would have about facts:

One might infer from Luke 5 that Jesus’ authority is over all and that He wanted the fishermen to experience the abundance that came with direct obedience to the master. Or, one might infer that Jesus wanted a visual illustration of the abundant “spiritual catch” that awaited the disciples if they faithfully followed their calling. A reader could also infer that believers can attempt to create their own abundance or success through hard work, but must finally come to the realization that ultimately God is in control of success and all the circumstances surrounding a person’s work (p.6)

1.1.5.3. Beyond the lines

“Beyond the lines” comprehension reflects the ability of the reader to take the passage beyond the text and to apply it in another context” (Hetzel, 2000, p.6). For example, the reader can extract a general idea or a lesson he or she learned and apply it in another situation.

To sum up the three ways to think about levels of reading comprehension: on the line, between the lines and beyond the lines are very important ways; however,
a person who can read between the lines can interpret at a deeper level not like the one who is reading only “on the lines” he might miss the positive and negative things and have an electrifying experience. The reader who is reading beyond the lines can understand additional ideas that are related but beyond the scope of the text.

1.1.4. Assessing reading comprehension

Many methods exist to assess reading comprehension, the very common ones are the alternative and the traditional method.

1.1.4.1. The alternative method

Aebersold and Field (1997) proposed six alternative assessment methods for reading comprehension focusing on students’ learning products, students’ participation in the classroom and making learning processes observable. The well known methods used by teachers and researchers to assess reading comprehension are. First; portfolios which provide a number of elements that could serve as a part of the evaluation of the students’ work in the reading course, Second; Homework, used to let students learn what they do not know or what they need to ask questions about; this can be a valuable part of an assessment plan in a classroom, third; Homework, used to let students learn what they do not know or what they need to ask questions about; this can be a valuable part of an assessment plan in a classroom. Besides that there are: the Self- assessment, Peer assessment and Teachers' Practices for Assessing Reading.

1.1.4.2. The traditional method

The traditional method to assess reading comprehension is stated clearly by Marin (2009) referring to the model of Aebersold & Field (1997) they said that
The traditional method for assessing reading comprehension is testing. Testing depends not only on the teachers’ abilities to convey the authority they exercise in a test, but also on their responsibility as educators to provide a learning atmosphere in which students can achieve as much as possible without unproductive tension and anxiety (Aebersold & Field, 1997).

Although there are many assessment and testing methods to assess the reading ability, no method should be singled out as the best, either the alternative or the traditional one Alderson (2000), said that:

It is certainly sensible to assume that no method can possibly fulfill all testing purposes... certain methods are commonplace merely for reasons of convenience and efficiency, often at the expense of validity, and it would be naïve to assume that because a method is widely used it is therefore valid(p.4)

**Conclusion**

It can be concluded that reading comprehension is essential in any reading session, it is defined as the core of the session itself and without it there is an aimless journey. Because of its importance many researchers devoted longitudinal and cross sectional studies to practice so many strategies, techniques and way to assess the reading comprehension.
Section Two: Dense questioning strategy

1.2.1. Definition of questioning

1.2.2. The importance of questioning in the EFL reading classes

1.2.3. Questioning techniques

   1.2.3.1. The wait time

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1.2.4. Questioning in reading

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Conclusion
Introduction

Over the past 100 years, multiple U.S.A based studies have focused on the use of questioning as a successful and universal pedagogical technique; it draws the attention of many researchers. In this chapter the focus will be on the questioning strategy and the dense questioning in general. As a first step in the first section, the questioning strategy will be tackled by giving different definition to the concept, besides that many techniques will be stated like: the wait time, Socratic seminar and dense questioning. Types of questioning are also tackled in this chapter. The dense questioning will be explained by mentioning how it works, how it can be used in classes and different types of questions within the same strategy.

1.2.1. Definition of questioning

Questioning is fundamental to effective teaching and learning. William (2003) argues that questioning is a critical skill that teachers must learn to do well and that students need to be taught. Through questioning, teachers gather evidence about their students’ current level of knowledge and skills, as well as their interests. Teachers can use strategically planned questions to guide students’ thinking on a topic, identify challenges and misconceptions, and focus their efforts to achieve learning goals. (ibid.)

Questioning is an area of classroom practice identified by (Black, Harrison, Lee & Wiliam, 2003) as an important aspect of assessment for learning. Teachers use questioning as a mean to reinforce the reading comprehension in many tasks, it helps the teacher to really know point of strength as well as points of weaknesses of their students. The efficient mean is the questioning strategy for that Ezzaki (1986) mention that questioning is the safest mean of reinforcing comprehension skills
1.2.2. The importance of questioning in EFL reading classes

Researchers and other writers concerned with questioning in their works in order to remind or pay students’ attention to the fact that questioning has a long and venerable history as an educational strategy in EFL classroom. And indeed, the Socratic method of using questions and answers to challenge assumptions, expose contradictions, and lead to new knowledge and wisdom is an undeniably powerful teaching approach (Cotton, 1988).

In addition to its long history and effectiveness, questioning is also of interest to researchers and practitioners because of its widespread use as a contemporary teaching technique in foreign language classes. Researchers indicates that questioning is second only to lecturing in popularity as a teaching method and that classroom teachers spend anywhere from thirty-five to fifty percent of their instructional time conducting questioning sessions.

1.2.3. Questioning techniques

1.2.3.1. The wait time

Teachers usually help their students to learn critical thinking by encouraging them to use different questioning techniques, which has a great importance in any session procedure. Many researchers were studying the questioning techniques and they found that the majority of teachers use questioning techniques whether they are aware about them or not.

Techniques that have been used by teachers vary in the efficiency from one technique to another, a good teacher chooses and apply the best one that suits his
aim in engaging students in any assignment, and there are several techniques to look at their advantages.

Best teachers use the wait time as an effective technique to reinforce both students’ thinking and behavior. By the wait time teachers want to give enough time to their students to think about the task before responding to questions. Richard (1991) said that the wait time is the amount of time that elapses between a teacher asking a question and calling upon a student to answer that question. The teacher gives his students an opportunity to think deeply before they respond to any question, in few seconds of silence. Teachers should provide a wait time of 3 to 5 seconds to give students a chance to provide an answer before moving to another task (Meador, 1972).

Jones (n. d) have discovered that when the wait time is given to students by their teachers after posing any question, students behave positively. One of the positive outcomes is reducing the length and correctness of their responses, and decreasing the “I don’t know” answer. Moreover the wait time can enhance the analysis and problem solving skills of students by giving sufficient wait time before responding to any question. Throughout the provided time student expect at any time that the teacher will select him or her, so they work hard during the wait time.

1.2.3.2. Socratic Seminar

One of the questioning techniques known as Socratic seminar in which the teacher asks students to write down questions that they have about concepts, at the end of the lesson or the unit, the teacher then will organize them into small groups and select one of the students to be the guide of the discussion. Socratic Seminar is
named for their embodiment of Socrates’ belief in the power of asking questions.
For Elfile (1989) the Socratic seminar is a formal discussion, based on a text, in
which the leader asks a specific type of questions, within the context of the
discussion.

The National Paid Center, which has developed extensive materials on
using seminar in classrooms, defines the Socratic seminar as a collaborative,
intellectual dialogue facilitated with open –ended questions about a text. In a
Socratic seminar, the participants carry the burden of responsibility and share ideas
with the whole group and respond to each other.

The aim behind applying Socratic seminar is to build up discussion not only
about the right answer, the purpose is to encourage students to think and to exchange
ideas openly while examining ideas in a rigorous and a thoughtful manner.

1.2.4. Questioning in reading

Questioning is an important active thinking activity, learners use while reading
and trying to make sense of text,” it is a central part of comprehension for students
and teachers” (Camille, 2008.p.63).Long or short passages requires the deep
understanding Judi (2009)said that while using questioning strategies to teach
reading comprehension , educators must remember that all questions are not alike,
they must strive to support students’ thinking by modeling questioning that does not
end with knowledge level questions .Providing questions to readers should go
beyond what is founded in the text , to read between lines and imagine situations
described on the text.
Asking questions while reading tend to have a purpose behind, some teachers provides different questions to make students remember and connect what they have, others want to build a relation with the author like his personality, his way of thinking and the message he wants to convey, others want to have a preparation to what is coming next as a warming up and this happens before reading any text or passage.

1.2.4.1. Questioning before reading

Before reading any passage educators can ask different questions, starting by asking readers about the title of the text and their ideas and expectations just from the title, it is a kind of preparation for readers before starting reading a text, the teacher also can ask learners to list all the information they have in their minds about the title of the text which can be helpful for them in understanding the material when recalling it. Another point is that the gathered knowledge from the title can help the reader to reframe or reorder what they have and know by noting what they agree with. The group discussion before reading any text can be helpful for readers, it helps you as a teacher to discover what you bring to their reading, and if they find new background information they can ask for it. In pre-reading strategies teachers can ask students to list all words in the assignment that may be important for them to understand

1.2.4.2. Questioning during reading

During reading, questions by both teachers and students would enhance their understanding of the text. Generating questions by teachers and readers play an important role in the process of learning how to read and again how to read better.
There are so many questions that teachers may provide about the text like: questions about the main character of the text, the setting, and the atmosphere felt in the text. Readers also can ask questions about the text, the authors’ style, new words stated in the text, and even expect what is going to happen on the next event. Self questioning considered as an effective strategy that would enhance comprehension for learners, it can be used during reading by readers to understand the text.

Namara(2007) good readers often have developed the strategy to self question during reading. This strategy makes their understanding of the text deeper, remember the text better, and generate inferences that are central for coherence. It is a set of steps that a student go through to generate, think about, predict investigate and answer questions that satisfy curiosity about what is being read. Sometimes their questions clarify information that was missed on the first reading (Tovani, 2007).

1.2.4.3. Questioning after reading

Good readers often still have questions when they finish reading, these questions tend to be pondorable and don’t have simple answers (Tovani,2007). After reading any passage readers need to go beyond a text to infer, it requires from the reader to go to another source in order to find answers as Tovani(2007) believes. Questions that are asked after reading encourage thinking and make the analysis of the text deeper, for some students having questions after finishing the text is a new concept here Tovani(2007)said that the end is just the beginning(Tovani,2007.p.86). After reading any text it is advised to ask students to write down a brief piece of learning or an understanding that they gained during the lesson. Karen (2010)said that students can be encouraged to write down a brief but important piece of learning
or understanding that they gained during the lesson, and not only that, summarizing and synthesizing is very helpful for them.

1.2.5. Types of questioning

1.2.5.1. Questioning the Author

It is said that “questioning the author: A yearlong Implication engage students with the text”, the author wrote that in order for students to feel able to construct meaning, the teacher would need to assist students with understanding that the text is written by someone who is imperfect, offer them specific, open-ended and request that they consider those probes while they read, and improve opportunities for collaboration (Beck, 1996). It helps students to see themselves as “revisers” of the material they read, where they are highly aware of their own meaning-making processes, the student will be active and engage in constructing meaning.

Questioning the author (Q.T.A) is a teaching strategy that helps students learn to think more about who has written a text and how successful the writer was for them as audience or readers (Beck, Keown, Hamilton, Kucan1997). Students as readers can develop a kind of dialogue with the author. They are encouraged to ask questions that get at a writer content expert’s decision, some questions like: what was the author trying to say, what would the author have said instead?. The focus is on the author only, thinking about how the author has written for them as readers and learners (Camille 2007)

More examples that are stated by Camille (2007) about questions that might be asked are the following: why do you think the author spent a paragraph explaining
cuneiform writing system? What do you think it represents to the author? what is clearly written? (2007,p. 123)

While questioning the author students feel more active as participants, they can judge, give their opinions, and even criticize the style, thoughts and the way of thinking of the author. The teachers have a different roles in this teaching strategy, they use to give a feedback to learners and correct their answers, however in questioning the author the teachers’ role changes from giving feedback to stimulating students’ thinking and search for their own ideas and answers, they guide and shape group discussion.

Students get benefits from questioning the author, it makes students work and activate their knowledge, they consider ways information connected to construct meaning. The text becomes understood to students and they can even refer back to the text to verify, argue, and interpret different ideas found on the text. One of the major benefits of questioning the author is that students acquire a deep understanding of major text ideas since they know more about the author and his way of thinking.

1.2.5.2. Questioning in general

Teachers ask different questions to their students as a mean to determine what they have in relation to the text they read. Questioning is also an important active thinking activity learners use while reading and trying to make sense of texts(Camille, p.124).Moreover, the way teachers ask questions is a very important thing in the teaching process and they should be skilled when they do it. The traditional way of asking questions is that teachers ask students a question, the
student answer it, the students answer these questions according to their understanding, then he will give immediate feedback to their answers. Many researchers criticized the traditional form of school dialogue and they name it I-R-E (initiative, response, evaluation), for those researchers especially Camille (2009) and Melan (2007) the technique does not really help students to develop comprehension; it simply helps teachers to test students

1.2.6. Definition of Dense Questioning Strategy

Good readers build meaningful links between what they read, think, and the world in which they live."The dense questioning strategy teaches students to respond to different types of questions based on text connections" (Christenbery, 1938, p. 20). Dense Questioning is strategy used for guiding students through a series of conceptually challenging questions that encourage making connections between different texts, and between text and real world. Teachers in the classroom pose different questions to the students about three areas, these areas are: the text, the reader and the world around the reader.

Walsh (2005) stated that the dense questioning calls attention to the relationship between what they term matter (the subject matter), personal reality (students knowledge derived from experience), and external reality (knowledge from other content area and the outside the world). We call these domains the subject, personal knowledge, and other subjects.

The contribution of the learner takes an important role in the classroom especially in reading texts. When the teacher asks questions learners are engaged from the beginning till the end, because the dense questioning strategy involves learners as a central part of it, they are supposed to answer questions about the text, the world, the experience they have
to reach at the end the deep understanding of the text.

1.2.7. Description of the strategy

The dense questioning strategy asks students to answer a basic question that the text can answer, then add to this some component that links what they are reading to their own experiences, thoughts, beliefs, opinions. Eventually they reach one single question called a "dense question" about which they can write an essay or a short composition. Christenbery and Kelly they divided questions of the strategy into three types, but in fact they are the same which are: white questions includes the matter, personal and external realities. Shaded questions includes: The Matter/Personal Reality, personal Reality/External Reality, and The matter and external reality. The dense question includes: The Matter, Personal Reality and External Reality (Metametrics, n. d.)

Dense Questioning can be used in classes at two different levels. At the first level, students are asked to answer questions based on specific aspects of the text by the teacher. As students become familiar with the strategy, they can be given the activity at a more difficult level, here they are supposed to pose their own questions that correspond to the set of categories and the teacher here should take into consideration the level of his students, i.e. if they are in an advanced level they can pose questions if not they are going to respond to the teacher’s questions only. As students engage in reading with the strategy, their understanding of the text becomes richer and deeper (Metametrics, n. d.).

The dense Questioning strategy can be used in all content areas. The teacher can apply the dense questioning in the classroom by allowing students to work in pairs, in small groups or as a part of classroom discussion.

The strategy can be used in a wide variety of activities, as an example; the teacher can use the dense questioning as a practice to develop topics for writing assignment(thesis
statement for an assessment of the text).

Different groups may be assigned different types of questions. The groups may then be reformed so that students may share their questions (Metametrics, n. d.).

The questioning circle is a combination between three circles each one represent one area: the text, the reader and the world around the reader. The circle is a framework comes from the work of Christenbery and Kelly (1982) calls attention to the relationship between the three areas. Christenbery and Kelly (1982) said that” The Questioning Circle, an alternative to sequential and hierarchical schemata, is a model for developing instructional questions”(p.13)

“the Questioning Circle provides a logical, yet flexible, format for questioning”(Christenbery and Kelly, 1982. p.13)

The plan is composed of three circles: the matter it means the text, personal reality it means the reader' experience and point of view and then the external reality. The first circle, the matter or the text, represents the subject of discussion. The second circle, the reader, represents the individual's experiences, values, and ideas. The third circle, the world or other literature, is related to the concepts of other people and cultures.

Christenbery and Kelly (1982)said that:

there can be a suggested procedure for using the Questioning Circle, it would be that an instructional goal should include not only questions in the three separate circles (the matter, personal reality) , external reality but also questions in the areas where the three areas Intersect. in the three shaded areas combining the matter with personal reality, personal reality with external reality, and external
reality with the matter the components collide, mingle, and ultimately enrich each other. Finally, the area where all three circles intersect, the dense area, represents the central, most important questions, the questions that subsume all three areas and whose answers provide the deepest consideration of the issue. (p.20)

The purpose of questioning circle is clearly stated by Walsh and Shattes (2010), they said that the application of questioning circle encourages thinking about a reading in order to identify the key idea and formulate different questions about it. Moreover the questioning circle facilitates listening to learning from different points of view about any passage, it happens when learners exchange their ideas about a point in a text. The most important purpose of questioning circle is that it helps participants come to a deeper understanding of the written passage.

Christenbery and Kelly (1982) said that:

The Questioning Circle, lacking the defined abstractness of hierarchies, is flexible. English teachers may find it particularly adaptable for literature, language, and composition. For example, in literature, the matter would be the text; personal reality that of the reader and external reality that of the world and other literature. In language, the matter would be the concept or idea under study; personal reality that of the speaker reader writer of language; and external reality the language as it is used outside the speaker' reader 'writer's environment, the world. (p.20)

Figure 1: The questioning circle( Christenbery &Kelly,1982,p.6)
1.2.8. Types of questions under the dense questioning strategy

The dense questioning strategy includes different questions about the text, the reader and the world around the reader. The first type of questions which is clarified by Christenbery (1982) known as white questions they are questions about the text, the reader and the world around the reader identified by Christenbery (1982) as: the matter, personal reality and the external reality. The second type of questions known as Shaded questions which are questions about the text/the reader, the reader/world, and the text/world. The third and the last type is known as dense question in which the teacher combines the three areas in one question, i.e., the matter, personal reality and external reality.

1.2.8.1. Questions about the text

The teacher asks questions about the text or what is known as the matter. Theses questions are about information found in the text, like asking about a character, title, author
or very specific event description. As an example; Who is the narrator of the story? What was the name of the main character?(“Dense questioning”, n. d.).

1.2.8.2. Questions about the reader

With the dense questioning the teacher involves the student and make him as an active participant. Posing questions about the readers’ views, experiences and way of thinking by including the word” you “makes the reader included and highly motivated. As an example,” Have you ever felt fed up with everything and just wanted to take off, get away on your own? Have you ever been afraid of someone just because they were different?”(“Dense questioning”, n. d.).

1.2.8.3. Questions about the world

Asking questions about the world is an important matter in the dense questioning strategy. The teacher may include questions about Knowledge of history, other cultures, other literature and even questions about what is going around the world on television or the internet to make a connection or a strong relationship between studies and the world around the reader. The use of different words like‘ society, world, people, community are used to make a clear connection with the world, as an example,” What other character in a book or a movie would you compare the main character to?”(“Dense questioning”, n. d.).

1.2.8.4. Text/reader

The combination between the two areas in the dense questioning is an overlapping of questions in which the teacher can combine knowledge of the text with the reader's own experiences, values and ideas. Christenbery and Kelly (1982) clarify an example about the text/reader question:” What experience do I have, with this subject?”(p.22), as an example;
What characteristics do you share with the main character?

1.2.8.5. Text/world

Christenbery and Kelly (1982) explained the combination between The matter/external reality as following:” What would my audience think of this subject?”(p.22). The teacher can ask questions and combine knowledge of the text with knowledge of history and cultures and other pieces of literature, as an example;”In what ways are today's teenagers different?”("Dense questioning”, n. d.).

1.2.8.6. Reader/world

The personal reality is involved in the dense questioning. In this area the teacher can combine knowledge of the reader his experiences with the knowledge of the world around him. Walsh and Sattes (2005) stated that” Personal Reality/External Reality: How does my experience relate to the experience of my audience?”(p.92). An example to clarify,” in what ways are teenagers in other countries similar to our teenagers? In what ways are they different?” (“Dense questioning”, n. d.).

1.2.8.7. Dense question

The most important question in the dense questioning is known as the dense question in which the teacher combines knowledge of all three areas into one dense, i.e. one question about the text, one question about the reader and one question about the world or other literature. Other literature or world are the same and the teacher can take either of them .Christenbery and Kelly (1982) said that” the dense question focuses student attention on all areas and it is evident that the dense question subsumes facets of all other questions” (p.24).
Conclusion

It can be concluded that the questioning strategy can be used by teachers in classes at different levels and it contains many techniques and strategies like the dense questioning.
The later strategy aims at deepening the reading comprehension of students in reading.
Chapter two: Practical part

Introduction

2.1. Choice of the method

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2.3. The Research Design

2.4. Procedure

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2.4.2. Treatment

2.4.2.1. Experimental Group Instruction

2.4.2.2. Control Group Instruction

2.4.3. Post testing

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2.6. Scoring

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2.8.1.3. Control Group Post –Test versus Control Group Pre-test

2.8.1.4. Experimental Group versus Control Group on the post-test

General Discussion
Introduction

The aim of this study is to examine whether or not “Dense Questioning” would enhance third year secondary school students’ reading comprehension at Ziney El Hedj Belkassem. The measurement of the reading comprehension is done through the pre-test and the post-test scores.

The practical part goes through different steps like the choice of the method, sample, research design. The procedure, instruments, scoring and the analysis of all of these elements will be tackled in this chapter.

2.1. Choice of the Method

The method is the way in which data is collected and the way the researcher follow. This study follows a quasi-experiment design to reach an aim at the end,. This design makes the most suitable means that typically allows the researcher to estimate the causal impact of dense questioning strategy on students’ reading comprehension.

2.2. The sample

The population is composed of 192 third year secondary school students of Literature and Foreign Languages at Ziney El Hedj Belkassem in Ain El Beida .The sample is randomly chosen from the population it is composed of two pre- existing groups one was assigned as a control group made up of twenty students , and the second as the experimental group that has the same number. Students in both groups have different ages, cultural background and intellectual abilities, and the curriculum devotes one chapter to the reading skill .In addition to that students are specialized in foreign languages like English and French and they have an acceptable level in the English
language as a fundamental module, besides that they are studying English for more than six hours per week.

2.3. The research design

The design of the current study is a quasi-experimental design which is composed of two groups, the control and the experimental group. Both groups were exposed to the pre-test before having a treatment about reading text with dense questions.

This research focused on the following question:

Does the dense questioning strategy enhance the reading comprehension of students?

To answer the research question the following hypothesis is raised:

(H₁): There would be a significant difference in reading comprehension between the students who are asked dense questions and those who are not.

The null hypothesis is set as follows:

(H₀): There would be no significant difference in reading comprehension between students who are asked dense questions and those who are not.

In this study the dependent variable is the reading comprehension; however, the independent variable is the dense questioning strategy.

The research design is represented as follows:

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Pre-test</th>
<th>Treatment 1</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>Pre-test</td>
<td>Treatment 2</td>
<td>Post-test</td>
</tr>
</tbody>
</table>
Experimental group: It consist of 20 students.

Control group: It consist of 20 students.

Pre-test: It was a reading text with dense questions.

Treatment 1(T1): It was in a form of short texts followed by dense questions

Treatment 2(T2): The same texts of the experimental group were given to the control group.

Post-test: It is the same pre-test without any modification.

2.4. Procedure

2.4.1. Pre-testing

Students in both groups were pre-tested at the first time by giving them a reading text followed by dense questions to test their reading comprehension. The text was about education in England. The time of the pre-test was about one hour for both groups to allow students to read the text and answer ten questions. Many students were asking whether their marks will be counted or not and they were informed that it has no relationship with the exams ‘marks.

2.4.2. The treatment

After having a pre-test, the treatment period took place in both groups. The time devoted to apply the treatment was three sessions; each session took half an hour. There was a wait time given to students after posing questions, this wait time aims at letting students think deeply before answering and organize their ideas.

2.4.2.1. Experimental group instruction

The experimental group was taught reading comprehension through the application of the dense questioning. Table 2 represents the schedule of all sessions that the experimental group took during the treatment period in which learners were provided with a reading text with dense questions. They were asked to read the text first and then
they were asked dense questions with a wait time from five to ten seconds each time.

**Table 2:** Schedule of the experimental group session

<table>
<thead>
<tr>
<th>Session</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A reading text about “Mercy of Allah”</td>
</tr>
<tr>
<td>2</td>
<td>A reading text about” Monument”</td>
</tr>
<tr>
<td>3</td>
<td>A reading text about ”Kata’s family”</td>
</tr>
</tbody>
</table>

2.4.2.2. Control Group Instruction

The control group was exposed to the same passages of the experimental group, however; they were asked questions about the text only without being asked dense questions, i.e. they were following the ordinary way of receiving and responding to questions.

2.4.3. Post-Testing

The post test was administered during the fifth week for each group under the same conditions i.e. the same time devoted to answer the test which is one hour and half. The pre-test was the same as the post-test, i.e. the reading text with dense questions. The post-test was conducted to examine whether or not any improvement in the learners’ reading comprehension. The period between the two tests was five week. This period allows us to guaranty that students in both groups cannot remember the pre-test and they answer in a different way for both groups i.e. The control group and the experimental group.

2.5. Instruments

2.5.1. Test used in the Pre-Testing

Students in both groups were pre-tested and post-tested through the use of the same text with its questions. The text was about Education in England taken from their textbook followed by ten dense questions following the modal of Christenbery and Kelly (1982) (Appendix A).
2.6. Scoring

Scores should be available to assess students’ reading comprehension through tests in which the same way of marking students were used in the pre-test and post-test. The maximum score given was 20. Each question was scored on 2 points. One point was given to the yes or no answer and the second point is given to the justification, if the student answer by giving a correct form structure and spelling to the justification, will receive a point, if not the half point will be given.

2.7. Statistical analysis

In order to analyse the gathered data, the paired sample t-test was used to measure any improvement in both groups, the experimental group and the control group, from pre-to post-test.

The independent samples t-test also was used in this study in order to determine any significant difference between the experimental group students, who were asked dense questions, and control group students, who were not.

The next section will present all the analysis in details.

2.8. The results

In this section the statistical analysis of the study will be presented. The starting point is the presentation of the results of the reading comprehension task used in pre-testing and post-testing, and ends with the discussion of the findings.

2.8.1. Results of the reading comprehension task
**Table 3:** The frequency of the experimental and control groups’ scores on the reading comprehension task.

<table>
<thead>
<tr>
<th>Score</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test Frequency</td>
<td>Post-test Frequency</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>4.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>6.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7.5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8.5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>9.5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>11.5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>12.5</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>13.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

2.8.1.1. Control Group versus Experimental Group Scores on the Pre-test
Table 3 shows that the experimental group slightly outscored the control group on the pre-test. The control group score with a mean $\bar{X}_c 8.45 = $; however, the experimental group score with a mean $\bar{X}_e 8.72$.

For the 40 scores, we have as follows:

**Control Group:**

$7 \geq 10 \rightarrow 35 \% > 10$

$13 < < 10 \rightarrow 65 \% % < 10 < 10$

**Experimental Group:**

$7 \geq 10 \rightarrow 35 \% % > 10$

$11 < < 10 \rightarrow 55 \% % < 10 < 10$

The control group’s scores starts at 2 (the lowest score) and ends at 14 (the biggest score) with a peak at 8.5 (the most frequent score). Moreover, the control group’s most frequent scores were between 8.5 and 10.5

The experimental group’s scores begins at 2 (the lowest score) and ends at 13 (the biggest score) with one peak at 13; however, the most frequent scores in the experimental group are both 9 and 13.

### 2.8.1.2. Control Group Post-test versus the Control Group Pre-test

Table 3 shows that the most frequent score of the pre-test in the control group is 8.5; whereas, the post test most frequent score is 9. Moreover, scores that are higher than the average in the pre-test are less frequent than those that are lower than the average, in case of post -test scores that are higher than the average in the post-test are less frequent than those that are lower than the average.

For the total 20 scores, we have:

**Pre-test:**

$7 \geq 10 \rightarrow 35\% \geq 10 % \geq 10$

$13 < < 10 \rightarrow 65\% < 10 \rightarrow 65\% < 10$

**Post-test:**

$9 > > 10 \rightarrow 45\% > 10\% > 10$
11 < <10\rightarrow 55\% < 10\% < 10

The mean of the control group in the pre-test was \( \bar{X}_{p} = 8.25 \) which is lower than the post-test mean \( \bar{X}_{pt} = 8.67 \). Seeing whether there is a significant development from pre-test to post-test scores, the difference between the pre-and post-test for each participant have been calculated (table 4), and the mean difference score has been obtained \( \bar{d} = 0.42 \). To test whether or not there is a significant difference on control group’s scores from pre to post-test the paired sample t-test will be carried out:

1. Calculate the difference between each participant pre-test and post-test scores.
2. Calculate the mean difference, \( \bar{d} \).
3. Calculate the standard deviation of the differences, \( S_d \), and the standard error of the mean difference, \( \overline{d} = \frac{\sum d}{N} = \frac{\Sigma d}{N} \)
4. Calculate the t-statistic, \( t_{n-1} = \frac{d}{SE(\bar{d})}t_{n-1} = \frac{d}{SE(\bar{d})} \). Under the null hypothesis, this statistic follows a t-distribution at N-1 degrees of freedom.
5. Enter a table of the t-distribution at N-1 degrees of freedom, choose the level of significance required (normally \( p = 0.01 \)) and read the critical t-value.
6. If the observed t-value is higher than the critical t-value, it can be said that the differences between the scores of the pre-test and post-test are significant.

**The mean difference**

\( \bar{d} = \frac{\sum d}{N} = \frac{\Sigma d}{N} \), where \( d = \) mean, \( d = \) difference scores, \( n \) = number of subjects, and \( \Sigma = \) sum

\( \bar{d} = 8.585 \)

\( SE(\bar{d}) = 0.2020 \)

\( \bar{d} = 0.42 \)

**The standard deviation of the differences**
\[ s_d = \sqrt{s^2} = \sqrt{\frac{\sum d^2}{N} - \bar{d}^2} \]

Where SS = variance, and \( \sum d^2 \) = sum of the square differences scores

\[ s_d = \sqrt{\frac{39.75}{20} - (0.42 \times 0.42)} = \sqrt{1.98 - 0.17} = 1.81 \]

\[ s_d = \sqrt{\frac{39.75}{20} - (0.42 \times 0.42)} = \sqrt{1.98 - 0.17} = 1.81 \]

\[ s_d = 1.34 \]
Table 4: The control group’s pre-test, post-test, and difference scores on the reading task

<table>
<thead>
<tr>
<th>Individual Student</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>4</td>
<td>5</td>
<td>+1</td>
</tr>
<tr>
<td>02</td>
<td>8.5</td>
<td>11.5</td>
<td>+3</td>
</tr>
<tr>
<td>03</td>
<td>8.5</td>
<td>10</td>
<td>+1.5</td>
</tr>
<tr>
<td>04</td>
<td>7</td>
<td>6</td>
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</tr>
<tr>
<td>05</td>
<td>12</td>
<td>13</td>
<td>+1</td>
</tr>
<tr>
<td>06</td>
<td>8.5</td>
<td>9</td>
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</tr>
<tr>
<td>07</td>
<td>7.5</td>
<td>9</td>
<td>+1.5</td>
</tr>
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<td>9.5</td>
<td>10</td>
<td>+0.5</td>
</tr>
<tr>
<td>09</td>
<td>9.5</td>
<td>12</td>
<td>+2.5</td>
</tr>
<tr>
<td>10</td>
<td>10.5</td>
<td>10</td>
<td>-0.5</td>
</tr>
<tr>
<td>11</td>
<td>11.5</td>
<td>9.5</td>
<td>-2</td>
</tr>
<tr>
<td>12</td>
<td>10.5</td>
<td>11</td>
<td>+0.5</td>
</tr>
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<td>3.5</td>
<td>-2</td>
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<td>4</td>
<td>5.5</td>
<td>+1.5</td>
</tr>
<tr>
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<td>10</td>
<td>11</td>
<td>1.5</td>
</tr>
<tr>
<td>20</td>
<td>7.5</td>
<td>8</td>
<td>0.5</td>
</tr>
</tbody>
</table>

\[
\bar{X}_d=8.25 \quad \bar{X}_d=8.67 \quad \bar{dd}=0.42
\]

The standard error of the mean difference

\[
SE(d) = \frac{s_d}{\sqrt{N}}(d) = \frac{s_d}{\sqrt{N}}
\]

\[
SE(d)(d) = \frac{1.341.34}{\sqrt{20}} \frac{1.341.34}{\sqrt{20}} \frac{4.474.47}{\sqrt{20}} \frac{4.474.47}{\sqrt{20}}
\]

49
SE\((\bar{d})\) = \(\bar{d}\) = 0.29

**The t-statistic**

\[
t_{N-1} = \frac{\bar{d}}{SE(\bar{d})}t_{N-1} = \frac{\bar{d}}{SE(\bar{d})}
\]

\[
t_{20-1} = \frac{0.42}{0.42} = \frac{0.29}{0.29}
\]

\[t_{19} = 1.44\]

After calculating the t-value we have to look at the table of significance to test whether the formula of the t-test is large enough to conclude that the difference between the scores is not found. The table of critical values of t will give us the value of t-ratio that should be high to be significant.

The control group’s students is 20, so, the degree of freedom (df=N-1) is 19. This means that with this size, any t value below the critical value would have occurred by chance alone. The level of probability we should follow in this study is \(p=0.01\); therefore the t critical value is 2.86. It is obvious that the observed t-value largely goes beyond the critical t-value.

\[t_{obs} > t > t_{crit}(1.44, 2.86)\]

The difference between pre-test scores and post-test scores for the control group is not significant. We can say that the difference score from pre to post is not significant statistically.
**Table 5:** The control group’s square difference scores on the reading task control group’s pre-test, post-test, and difference scores on the reading task

<table>
<thead>
<tr>
<th>Student</th>
<th>Difference scores d</th>
<th>Square difference scores $d^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>+3</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>+1.5</td>
<td>2.25</td>
</tr>
<tr>
<td>4</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>+1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>+0.5</td>
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<tr>
<td>7</td>
<td>+1.5</td>
<td>2.25</td>
</tr>
<tr>
<td>8</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>9</td>
<td>+2.5</td>
<td>6.25</td>
</tr>
<tr>
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<td>-0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>11</td>
<td>-2</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>13</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>14</td>
<td>-2</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>16</td>
<td>+0</td>
<td>0</td>
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<td>17</td>
<td>-2</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>+1</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>20</td>
<td>+1.5</td>
<td>2.25</td>
</tr>
<tr>
<td></td>
<td>$\Sigma d=8.5$</td>
<td>$\Sigma d^2=39.75$</td>
</tr>
</tbody>
</table>

**Figure 1:** Control group scores
2.8.1.2. Experimental Group Post –Test versus Experimental group Pre-test

Noticing the table 5, we notice that the experimental group shows an improvement in their post-test scores in which ten students out of twenty have scored more than the average. However, only 9 students in the pre-test have scored above the average and the other students score below the average.

**Pre-test:**

- $9 \geq 10 \rightarrow 45\% \geq 10 \geq 10 \rightarrow 45\% \geq 10$
- $11 < 10 \rightarrow 55\% < 10 \leq 10 \rightarrow 55\% < 10$

**Post-test:**

- $10 \geq 10 \rightarrow 50\% \geq 10 \geq 10 \rightarrow 50\% \geq 10$
- $10 < 10 \rightarrow 50\% < 10 \leq 10 \rightarrow 50\% < 10$

Moreover, we have noticed that the pre-test scores of the experimental group starts at 2, and ends at 13 and the score 13 is the most frequent score. The post test scores begins at 9 and ends at 13.
Table 6: Experimental group’s pre-test, post test, and difference score on the reading task

<table>
<thead>
<tr>
<th>Individual Students</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>8.5</td>
<td>5.5</td>
<td>-3</td>
</tr>
<tr>
<td>02</td>
<td>11</td>
<td>11</td>
<td>+0</td>
</tr>
<tr>
<td>03</td>
<td>2</td>
<td>4</td>
<td>+2</td>
</tr>
<tr>
<td>04</td>
<td>7</td>
<td>10</td>
<td>+3</td>
</tr>
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<td>05</td>
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</tr>
<tr>
<td>06</td>
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<td>+1.5</td>
</tr>
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<td>07</td>
<td>7.5</td>
<td>8.5</td>
<td>+1</td>
</tr>
<tr>
<td>08</td>
<td>8</td>
<td>9</td>
<td>+1</td>
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<tr>
<td>09</td>
<td>9.5</td>
<td>13</td>
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<td>12</td>
<td>13</td>
<td>+1</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>11.5</td>
<td>+0.5</td>
</tr>
<tr>
<td>12</td>
<td>12.5</td>
<td>13</td>
<td>+0.5</td>
</tr>
<tr>
<td>13</td>
<td>10</td>
<td>13</td>
<td>+3</td>
</tr>
<tr>
<td>14</td>
<td>12</td>
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<td>+1</td>
</tr>
<tr>
<td>15</td>
<td>8</td>
<td>9</td>
<td>+1</td>
</tr>
<tr>
<td>16</td>
<td>7.5</td>
<td>8.5</td>
<td>+1</td>
</tr>
<tr>
<td>17</td>
<td>9</td>
<td>11</td>
<td>+2</td>
</tr>
<tr>
<td>18</td>
<td>6</td>
<td>7</td>
<td>+1</td>
</tr>
<tr>
<td>19</td>
<td>3.5</td>
<td>8</td>
<td>+4.5</td>
</tr>
<tr>
<td>20</td>
<td>9</td>
<td>12</td>
<td>+3</td>
</tr>
</tbody>
</table>

$\bar{X}_{pre} = 8.75$  $\bar{X}_{post} = 10.20$  $\bar{d}_{\text{avg}} = +1.4$
**Figure 2:** Experimental group’s scores on the reading task

![Bar chart showing experimental group's scores](chart.png)

The post-test mean of the experimental group $\bar{X}_{Po}=10.20$ is higher than the pre-test mean $\bar{X}_{Pr}=8.75$, and the mean difference $\bar{d}=1.4$.

To check whether the experimental group’s difference between pre-test and post-test scores was due to the application of the independent variable which is the dense questioning, a paired-samples t-test was carried out.

**2.8.1.3.1. The paired-Sample t-test**

The paired sample t-test allow the researcher to analyze whether two sample scores collected from different condition are different or not, i.e. whether there is a disparity between individual group’ marks before and after the treatment.

**2.8.1.3.2. Procedure for Carrying out a Paired-Samples t-test**

The comparison between the experimental group’s pre-test scores a paired-samples t-test is to be carried
**The mean difference**

\[ \bar{d} = \frac{\sum d}{N} = \frac{\Sigma d}{N} \]

where \( d \)=mean, \( d \)=difference scores, \( n \) =number of subjects, and \( \Sigma \)=sum

\[ \bar{dd} = \frac{3434}{2020} \]

\[ \bar{dd} = 1.7 \]

**The standard deviation of the differences**

\[ S_d = \sqrt{\frac{\Sigma d^2}{N} - \bar{d}^2} = \sqrt{\frac{\Sigma d^2}{N} - \bar{d}^2} \]

Where \( SS \)= variance, and \( \sum d^2 \sum d^2 \)= sum of the square differences scores

\[ S_d = \sqrt{\frac{865}{20} - (1.4 \times 1.4)} = \sqrt{4.32 - 1.96} = \sqrt{2.36} \]

\[ S_d = \sqrt{\frac{865}{20} - (1.4 \times 1.4)} = \sqrt{4.32 - 1.96} = \sqrt{2.36} \]

\[ S_d = 1.53 \]
**Table 7:** The experimental group’s square difference scores on the reading task

<table>
<thead>
<tr>
<th>Student</th>
<th>Difference scores d</th>
<th>Square difference scores d²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+3</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>+0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>+2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>+3</td>
<td>9</td>
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<tr>
<td>5</td>
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<tr>
<td>6</td>
<td>+1.5</td>
<td>2.25</td>
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<tr>
<td>7</td>
<td>+1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>+1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>+3.5</td>
<td>12.25</td>
</tr>
<tr>
<td>10</td>
<td>+1</td>
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</tr>
<tr>
<td>11</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>12</td>
<td>+0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>13</td>
<td>+3</td>
<td>9</td>
</tr>
<tr>
<td>14</td>
<td>+1</td>
<td>1</td>
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<tr>
<td>15</td>
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<td>1</td>
</tr>
<tr>
<td>16</td>
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<td>+1</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>+4.5</td>
<td>20.25</td>
</tr>
<tr>
<td>20</td>
<td>+3</td>
<td>9</td>
</tr>
</tbody>
</table>

\[ \Sigma d = 34 \quad \Sigma d^2 = 86.5 \]

The standard error of the mean difference

\[ SE(d) = \frac{S_d}{\sqrt{N}}(d) = \frac{S_d}{\sqrt{N}} \]

\[ SE(\bar{d})(d) = \frac{1.191.19}{\sqrt{20}} \quad \frac{1.191.19}{\sqrt{20}} = 4.47 \quad 4.47 \]
\[ \text{SE}(\bar{d}) = \frac{\bar{d}}{t_{N-1}} = 0.26 \]

**The t-statistic**

\[ t_{N-1} = \frac{\bar{d}}{\text{SE}(\bar{d})} = \frac{\bar{d}}{\text{SE}(\bar{d})} \]

\[ t_{20-1} = 1.7 \times \frac{1.7}{0.26} \]

\[ t_{19} = 6.53 \]

After calculating the t-value we have to look at the table of critical value to test whether the formula of the t-test is large enough to conclude that the difference between the groups is not found. The table of critical values of t will give us the value of t-ratio that should be high to be significant.

The experimental group’s students is 20, so, the degree of freedom (df=N-1) is 19. This means that with this size, any t value below the critical value would have occurred by chance alone. The level of probability we should follow in this study is \(p=0.01\); therefore the t critical value is 2.86. It is obvious that the observed t-value largely goes beyond the critical t-value.

\[ t_{\text{obs}} > t > t_{\text{crit}} (6.53 > 2.86) \]

The difference between pre-test scores and post-test scores for the experimental group is significant.

**2.8.1.4. Experimental Group vs Control Group on the Post-test**

Table 3 shows that the post-test scores for the experimental group are slightly higher than those obtained by the control group. Moreover, the calculated post-test mean for the experimental group \( \bar{x}_E = 10.20 \) is slightly higher than that of the control group \( \bar{x}_C = 8.55 \).
For the total 40 scores, we have:

**Control group:**

\[ 9 \geq 10 \rightarrow 45\% > 10 \geq 10 \rightarrow 45\% > 10 \]

\[ 11 < 10 \rightarrow 55\% < 10 < 10 \rightarrow 55\% < 10 \]

**Experimental group:**

\[ 9 \geq 10 \rightarrow 45\% > 10 \geq 10 \rightarrow 45\% > 10 \]

\[ 11 < 10 \rightarrow 55\% < 10 < 10 \rightarrow 55\% < 10 \]

The scores of the control group’ post- test starts at 2 and ends at 14 with one peak at 8.5. However, the experimental group’s scores begins at 2 and ends at 13 with two scores as being the most frequent scores 13 and 12 that are really higher to the controls’ frequent scores.

The investigation of significant difference between the post-test mean scores of both experimental and control groups, is done by the parametric test known as the independent-sample t-test.

### 2.8.1.4.1. The independent-Samples t-test

Applying the independent-sample t-test was done to examine whether there exists a significant difference between the mean scores obtained by the experimental and control group and also to see the effect of the independent variable on the dependent one. The form is as follows:

\[
t_{N_1 + N_2 - 2} = \frac{X_1 - X_2 \sqrt{(N_1 + N_2 - 2)N_1 N_2}}{\sqrt{(N_1 S_1^2 + N_2 S_2^2)(N_1 + N_2)}}
\]

\[
t_{N_1 + N_2 - 2} = \frac{X_1 - X_2 \sqrt{(N_1 + N_2 - 2)N_1 N_2}}{\sqrt{(N_1 S_1^2 + N_2 S_2^2)(N_1 + N_2)}}
\]

To see whether the independent variable (dense questioning) has an effect on the dependent variable (reading comprehension), and reject the null hypothesis, we should calculate t and it must be higher than the tabulated t at a particular level of
probability (p=0.01).

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_k$</td>
<td>individual score</td>
</tr>
<tr>
<td>$\bar{X}_n$</td>
<td>group mean</td>
</tr>
<tr>
<td>$X_2^k$</td>
<td>square score</td>
</tr>
<tr>
<td>$N_x$</td>
<td>number of subjects</td>
</tr>
<tr>
<td>$\sum X_k X_k$</td>
<td>sum of the individual scores</td>
</tr>
<tr>
<td>$\sum X_2^k X_2^k$</td>
<td>sum of square scores</td>
</tr>
<tr>
<td>$S_x$</td>
<td>sample variance</td>
</tr>
</tbody>
</table>

**Pre-test**

**Experimental group**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\sum X_1$</td>
<td>175</td>
</tr>
<tr>
<td>$\sum X_1^2$</td>
<td>1226</td>
</tr>
<tr>
<td>$\bar{X}_1$</td>
<td>8.75</td>
</tr>
</tbody>
</table>

**Control group**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\sum X_2$</td>
<td>173.5</td>
</tr>
<tr>
<td>$\sum X_2^2$</td>
<td>1681.25</td>
</tr>
<tr>
<td>$\bar{X}_2$</td>
<td>8.25</td>
</tr>
</tbody>
</table>

**Post-test**

**Experimental group**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\sum X_1$</td>
<td>203</td>
</tr>
<tr>
<td>$\sum X_1^2$</td>
<td>2198</td>
</tr>
<tr>
<td>$\bar{X}_1$</td>
<td>10.20</td>
</tr>
</tbody>
</table>

**Control group**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\sum X_2$</td>
<td>173.5</td>
</tr>
<tr>
<td>$\sum X_2^2$</td>
<td>1681.25</td>
</tr>
<tr>
<td>$\bar{X}_2$</td>
<td>8.67</td>
</tr>
</tbody>
</table>
The sample variance

**Experimental group**

\[
S_1^2 S_1^2 = \frac{\sum x_1^2}{N_1} - \frac{\sum x_1}{N_1}^2
\]

\[
S_1^2 S_1^2 = \frac{2198}{20} - \frac{10.20 \times 10.20 \times 10.20}{20}
\]

\[
S_1^2 S_1^2 = 109.9 - 104.04
\]

\[
S_1^2 S_1^2 = 5.86
\]

**Control group**

\[
S_2^2 S_2^2 = \frac{\sum x_2^2}{N_2} - \frac{\sum x_2}{N_2}^2
\]

\[
S_2^2 S_2^2 = \frac{1681.25}{20} - \frac{8.67 \times 8.67}{20}
\]

\[
S_2^2 S_2^2 = 84.06 - 75.16
\]

\[
S_2^2 S_2^2 = 8.9
\]
**Table 8:** Square post-test scores of both groups on the reading task

<table>
<thead>
<tr>
<th>Student</th>
<th>Experimental group’s scores $X_1$</th>
<th>Square scores $X_1^2X_1^2$</th>
<th>Control group’s scores $X_2$</th>
<th>Square Scores $X_2^2X_2^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.5</td>
<td>30.25</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>121</td>
<td>11.5</td>
<td>132.25</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>16</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>100</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>5</td>
<td>13</td>
<td>169</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>100</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>7</td>
<td>8.5</td>
<td>72.25</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>81</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>13</td>
<td>169</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>10</td>
<td>13</td>
<td>169</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>11.5</td>
<td>132.25</td>
<td>9.5</td>
<td>90.25</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>169</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>169</td>
<td>6.5</td>
<td>42.25</td>
</tr>
<tr>
<td>14</td>
<td>13</td>
<td>169</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
<td>81</td>
<td>9</td>
<td>81</td>
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<tr>
<td>16</td>
<td>8.5</td>
<td>72.25</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>11</td>
<td>121</td>
<td>3.5</td>
<td>12.25</td>
</tr>
<tr>
<td>18</td>
<td>7</td>
<td>49</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>19</td>
<td>8</td>
<td>64</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>144</td>
<td>8.5</td>
<td>72.25</td>
</tr>
<tr>
<td></td>
<td>$\sum X_1=203$</td>
<td>$\sum X_1^2X_1^2=2198$</td>
<td>$\sum X_2=173.5$</td>
<td>$\sum X_2^2X_2^2=1681.25$</td>
</tr>
</tbody>
</table>

**The t-value**

$$t_{N_1+N_2-2} = \frac{X_1 - X_2}{\sqrt{\frac{(N_1+N_2-2)(N_1N_1)}{N_1(N_1+N_1)} + \frac{(N_1+N_2-2)(N_2N_2)}{N_2(N_2+N_2)}}}$$
\[
t_{20:2} = \frac{10.20 - 8.67 \times (20 + 20 - 2) \times (20 \times 20) - 10.20 - 8.67 \times (20 + 20 - 2) \times (20 \times 20)}{\sqrt{(20 \times 5.68 + 20 \times 8.32) (20 + 20)}}
\]

\[
t_{38} = \frac{1.53 \sqrt{88 \times 400} - 1.53 \sqrt{88 \times 400}}{\sqrt{(8 + 91.6) \times 40} - \sqrt{(8 + 91.6) \times 40}}
\]

\[
t_{38} = \frac{1.53 \sqrt{135 \times 40} - 1.53 \sqrt{135 \times 40}}{\sqrt{205 \times 40} - \sqrt{205 \times 40}}
\]

\[
t_{38} = \frac{188.61 - 188.61}{\sqrt{135 \times 40} - 188.61}
\]

\[
t_{38} = 1.73
\]

The number of students in both groups is 40, so, the degree of freedom (df=N-2) is 38. So, when entering a t-table at 38 degrees of freedom, we found a critical t-value of 2.71 at the 0.01 level of significance. Clearly, the observed t-value is lower than the critical t-value. Therefore, the null hypothesis is accepted, and the alternative hypothesis is totally rejected.

\[
t_{obs} < t_{crit} (1.73 < 2.71)
\]

The use the dense questioning as a reading strategy in EFL classrooms has no significant effect on the reading comprehension of the third year students of secondary school at Ziney El Hedj Belkassem –Ain Beida.

**General discussion**

This study aims at exploring the effectiveness of using the dense questioning strategy in enhancing students’ reading comprehension. The present study tested the following hypothesis:

There would be a significant difference in reading comprehension between students who are asked dense questions than those who are not.

Interestingly, the major findings will be discussed in details within two categories:
non-significant improvement for the experimental group, and also for the control group.

**Significant Improvement for the experimental group from pre to post-test**

As we mention before that the control group received the treatment following the traditional way; however, the experimental group received the treatment following the new strategy which is dense questioning. The findings of this research shows that the dense questioning strategy helps the experimental group in developing their reading comprehension and the prove is that there is a significant improvement from the pre-test to the post-test.

**Non-Significant Improvement of the experimental group compared to the control group on the post-test**

According to the present findings there is a clear fact that the experimental group show a significant improvement from pre-to post-test; however, when we compare the experimental group’ scores in the post-test with the control group scores, the dense questioning strategy failed.
GENERAL CONCLUSION

The analysis of the research findings shows that the dense questioning strategy bring a significant development in reading comprehension for the experimental group from pre-to post test.

Limitation of the study:

The application of dense questioning strategy needs more time from the beginning of the year till the end with different texts to guaranty the positive results.

Suggestions for further research:

The following are suggestions for further studies:

1. The dense questioning strategy works better with the advanced levels like university.

2. The dense questioning strategy can be tackled in future research in relation to other skills as speaking, listening, and writing. Whalsh and sattes (2010) said that the dense questioning encourages thinking about a reading in order to identify key ideas and formulate questions about them; facilitate listening to and learning from different points of view about a common reading, it also helps participants come to a deeper understanding and make personal meaning of a written passage.
References


English language teaching. (2008), 1(1), 5-10.


Appendix (A)

**Education in England**

No subject has as much importance for the British people as that of education. Most citizens believe that the state should provide education free of charge and to a high standard as well. At election time, politicians who promise to spent a great deal of money on education are more popular than those who promise only little. Recently there has been a lot of talk as to whether students must pay their own fees at university or not. A lot of people are afraid that higher education might be reserved for the privileged few because poorer students would not receive enough financial help from the government. This is the reason why private education is less accepted in Britain than it is in the United States.

Children are required to be in full-time education between the age of 5 and 16. Some receive their primary education at an infant school and then a junior school whereas others receive it at a primary school that combines the two. At about 11, they begin their secondary education at a comprehensive school or a grammar school. Secondary schools are much larger than primary school and students may have to travel longer distances by school bus or public transport. The students take the Standard Assessment test (SATs) at 14, then study towards the General Certificate of Secondary Education (GCSE) in as many subjects as they can manage, usually eight to ten. Afterwards, some students will start work while a few others will go to sixth-from college to study for advanced (A) levels in two, three, or four subjects in order to enter university, this requirement is more or less similar to what is required by American universities.

A National Curriculum was introduced in 1988. It has made the current British educational system different from the previous ones in at least two major aspects. First, unlike the old system, the present system sets the same subjects for all state schools.
Children have to study the core subjects of English, mathematics and science, and also the foundation subjects of technology, geography, history, art and physical education. Second, in contrast to the old practice, standards at individual school are watched closely by parents and the government. Schools are visited regularly by inspectors, and school performance tables are published annually to show how well individuals school have done in tests and exams. These “league” tables enables parents to compare one school with another. Schools which do not make adequate progress run a high risk of being closed.

(From Guide to British and American Culture, p.66)

Questions:

Answer the following questions:

1. Does the education in England has a little importance? If no say why?

2. Explain the different levels and grades of the English educational system?

3. Why are politicians popular in Britain?

4. What are other educational systems or movies you saw on tv have the same educational system as Britain has?

5. Do you believe that Algeria has to follow the British educational system? say why
6. What are the other European educational systems that are different from the English Educational system?

7. Can you think of some similarities between both educational systems, the British and Algerian one?

8. How do the Arab countries consider education?

9. Discuss the extent to which the Algerian educational system is similar to others educational systems in the world?

10. Do you think that the English educational system is highly valued in the world?
Appendix (B)

The treatment sessions

The first session

Mercy of Allah

It was two after midnight and the express night train was at full speed. Near one of the opened windows, a middle aged mother carrying her baby on her arms, was looking out. At an acute bend on the rail way, the train made a sudden jerk and the lady, all of sudden, found her baby flying off her arms. Her loud shrieks were of no use, the train could not be stopped.

When the train stopped at the next station, the lady still crying, told the station master what had happened. The station authorities at once sent a search party to find the dead body of the baby. But when they arrived to the scene, they were surprised to see the baby sitting on the morning wet grass as if someone had seated it there to play.


Answer the following questions:

1. Why the mother was crying?
2. Have you ever noticed a situation like that?
3. What are other accidents you saw look like that one?
4. Do you think that the mothers’ experience of losing the baby and then taking him back is a blessing from Allah that awakes people minds to many things?

5. How do people generally react to the type of situation that his mother is in? with chock or an attempt to help?

The second session

Monuments

The seven wonders refer to the ancient world’s seven most beautiful and impressive monuments. These monuments, build in ancient times, are located in the eastern Mediterranean region and the middle east. The most impressive of them all is the great pyramid located at Giza, which is a Subura of Cairo today. It is made of more than two million blocks of stone and has a square base. When it was build, the great pyramid was 145.75 meters high. It ranked as the tallest structure on Earth for more than 43 sentries. But over the years, it has lost 10 meters off its top.

The second most famous wonder is the enormous statue of Zeus. Built around 450 BC by the architect Lindon and carved by the great sculptor Phidias, this statue was made of gold and ivory. It was located at the ancient town of Olympia on the western coast of modern Greece, some 150 kilometers from Athens. Its base was 1 meter wide and 6.5 meters long. The statue itself was 13 meters high.

The text is taken from the textbook of middle school third year level. The aim behind choosing this text is to give them topics about civilization, heritage, because they have passages about ancient civilization

**Answer the following questions**

1. Where the most impressive and beautiful monuments are located?

2. Have you ever visited one of the very famous monuments in the world? Name it and give its characteristics.

3. how do you feel when you visited it for the first time?

4. Do you think that tourism is flourished because of the presence of monuments?

**The third session**

**Kata’s family**

When I was growing up, I lived with my mother, my sister and my brother in a small village. We were very poor. My father had died during the war and my mother found it very hard to support us. She always made sure we had food to eat, but she could not save enough money to pay the rates on our small farm.

I remembered one cold grey day a men came to the farm and argued with my mother about money. She tried to explain that we had none. He went away again, but several days later three men arrived. They walked straight to the barn; led the cow out and loaded it into a truck. Then they took the pigs.
Finally they went inside the house and took away my mother’s sewing machine.

Our lives changed greatly the day. Our mother cried bitterly as she packed a small bag with our clothes. She took us to our grandmother’s house. She kissed us all and left us there.

We waited for days for her to return and take us back to our farm, but she didn’t come. Nobody talked about her. We were all too worried and sad. Then about two months later we were informed that she got married and her new husband doesn’t want us.

Hood, K. B.


Answer the following questions:

1. What are the main characters of the story?
2. Have you ever been afraid of losing your mother?
3. How are poor people treated in today’s society?
4. Have you ever been surprised from the mother’s behavior like “Kata” when her mother left her?
5. Have you ever noticed the difference between how your family behaves and how families in other cultures behave? How does culture influence family?

6. If Kata’s mother stay with them and find another way to solve financial problems, how might the story have changed? What if you were the main character instead of Kata, would the story of changed? In what way?
Appendix(C)

The post-test

Students in both groups were exposed to the same pre-test and post-test which is a text about “Education in England” having the same questions in the pre-test.
🤴

فهيته هذه تسردنا يلي فرعتنا يلي اإبلاغ "هيجيتارتسا فلتكة حرط يلي" اإتِلسأا اءترفا يهفوا يلدى بسلاطنا إذ ما

تذخا قنين قبطن تسردانإ نم آوبنا ينبي جلحا جلحا ظانيض ريباء ظانيض غناجلا يلي الوعسا ل فلتّنا

هيجيتارتسا فلتكة حرط يلي اإتِلسأا اءترفا يهفوا يلدى بسلاطنا؟ نواعار ابلاط ريتخا وقبطن

تجامعلا داجيو ابادوج الوعسا وحرطما نم آوبنا تقياسا اهرخ ماعلا 62/4103/سرازنا. فذاك نوكراشما يف

أسرادنا نم آوبنابل ينوعوممج يعندة ينوعمجا وتيبرجنا و ينوعمجا تأّفلنا يعندة ينفرما يقفتّ رابتخا يصحق لة

قبطن تجاجعلا و ينوعمجا كهدب تيبرجنا ينفر هيجيتارتسلا آحرتقمًا لأا فلتّنا وو حرت امنيب اإتِلسأا

هيجيتارتسا ينفرما ينفر عبردة وبردة وفردة ينفرمًا ينفرمًا ورجدة نووحصننا طقف. ينعّل ينفرما يقفتّ لكر نم

 ينوعمجا جناتارابتخا لصحتما يلهدًا ينفرّ تأّفلًا مأ لقتّ حلي أأ ينفرسَريغة مه

اكصوصلنا أن تسردانإ ينفرّ ينفر بطايط اضعم نم. ينفصنا شاهيجولوا تساردنا اقليقتَا.
Résumé

Cette étude vise à étudier l'efficacité de la stratégie dense de questionnement sur la compréhension en lecture des élèves en anglais dans une école secondaire, Zeneb Elhadj Balkassem. Il a tenté de répondre à la question suivante : Est-ce que la stratégie dense de questions a un effet positif sur la compréhension en lecture des élèves ? 40 élèves dans une école secondaire ont été choisis au hasard dans le 2e semestre de l'année universitaire 2012/2013. Les participants de l'étude étaient composés de deux groupes assignés. Pour répondre à la question de l'étude, un pré-test a été administré pour la compréhension de la lecture. Nous avons préparé les matériaux qui seront enseignés sur la base de la stratégie de questionnement dense pour le groupe expérimental qui a été enseignée conformément à la stratégie plus tard la lecture ; tandis que le groupe témoin a été enseigné selon la manière conventionnelle et ils ont été exposés à des textes. À la fin de l'expérience, nous avons administré le post-test de compréhension de la lecture aux deux groupes. Les mesures statistiques ont été utilisées pour examiner l'importance du traitement de la variable dépendante qui est la compréhension en lecture. Les résultats ont révélé qu'il n'existe pas une différence significative a été observée en faveur du questionnement dense sur la variable de compréhension de la lecture est spécialement pour le group expérimental. L'étude a également proposé un certain nombre de recommandations et de suggestions pour la recherche future.