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The Effect of E-books on Students' Reading Comprehension

The Case Study of Second-Year EFL Students at Abdelhafid Boussouf

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Dedication

In the Name of Allah the Most Gracious, the Most Merciful all praise is to Allah, the Lord of all the worlds; and peace and blessings are upon our Prophet and Messenger Muhammad and all His companions.

I dedicate this work:

To the memory of my aunt "Fatima".

To my precious parents, my MOTHER for her constant encouragement and endless help, and my FATHER for his emotional support, his unconditional care, and his eternal sacrifices. May Allah bless both of you.

To my dear brothers Atef, Anis, and Asil, who had always supported me, and believed in me.

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ABSTRACT

Reading, in English, is the source of knowledge for listening, speaking, and writing. It is one of the receptive skills that EFL students need to develop their L2 proficiency. Because of its complexity, students fail to achieve reading comprehension. This research spotlights the problem of students' deficient reading comprehension of English materials. It examines the effect of reading electronic books on second year EFL students' reading comprehension. This investigation is based on the following hypotheses: 1/ the null hypothesis suggests that there is no relationship between reading E-books and reading comprehension; 2/ the alternative hypothesis suggests that there is a strong relationship between reading electronic books and the improvement of EFL students' reading comprehension. In order to test these hypotheses, a mixed methodology was selected, including both qualitative and quantitative data tools. First, an experiment was conducted on a sample of 2nd year students of English at Mila University. Then, EFL teachers were interviewed in order to gain more data about the topic. Based on the statistical analysis, the pretest and posttest results, driven from the experiment (the t-value in the paired samples t-test equals =15.18, moreover, the t-value in the independent samples t-test equals =6.44), led to the following conclusion: using electronic books, as reading materials, improved the students' reading comprehension abilities. On the basis of the results of the teachers' interview, e-books were evaluated as relevant and efficient resources to solve students' language problems. Moreover, teachers' consensus revolved around considering scanning and skimming as the best strategies for enhancing reading comprehension. In the light of these research findings, the study was crowned by some useful pedagogical implications, and recommendations for an effective EFL reading teaching and learning.

Key words: Reading, reading comprehension, electronic books (E-books).

List of Abbreviations

CD: Compact Disk

CG: Control Group

E-books/e-books: Electronic Books

E-devices: Electronic Devices

E-dictionary: Electronic Dictionary

EFL: English as a Foreign Language

E-learning: Electronic Learning

E-reader: Electronic Reader

EG: Experimental Group

ESL: English as a Second Language

L1: First Language

L2: Second Language

LMD: License-Master-Doctorate

P-books: Printed Books

PC: Personal Computer

PDF: Portable Document Format

RC: Reading Comprehension

%: Percentage

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Introduction

Introduction

Reading is a priceless tool and an essential instrument for lifelong learning, academic achievement and personal growth. It is one of the four basic skills in language learning and teaching. It is very important, not only as a language skill, but also as a language input for other skills to develop. It enables learners to acquire knowledge of the language and understand different subjects. For these reasons, it is very important for EFL learners not only to have the ability to read written materials, but also the ability to understand what they read. Indeed, many learners feel that they could not effectively comprehend what they read. Moreover, in today's world, people are no longer confined to reading printed books since many of them are embracing the digital world they live in, by accessing reading materials through electronic devices. The technology based materials have substituted the old printed ones. Particularly, the paper-based books have been replaced by the digital books, being known as the Electronic books. Electronic resources, recently, have gained acceptance among students since they include mobility, saving physical space, saving time and money and ease-of-use. E-books are widely considered as an efficient electronic source for reading comprehension.

1. Statement of the Problem

Millions of people today want to improve their English since it is the language of the world. Opportunities to learn English are provided in many different ways such as through formal instruction, travel, study abroad, as well as the media and the Internet. The worldwide demand for English has created an enormous demand for quality language teaching and language teaching materials. Learners set themselves demanding goals, in which they want to be able to master English to a high level of accuracy and fluency. Although neglected, reading is an essential skill for English as a second or foreign language (ESL/EFL). For many, reading is the most important skill to master. With strengthened reading skills, ESL/EFL readers

would make greater progress and attain greater development, in all academic areas (Carrel, 1988).

In the Algerian universities, under the LMD system, listening, speaking, and writing have always been considered as the core components through which students are exposed to language; this results in students' inability to comprehend English reading materials. With the current technologies, printed books stand as an obstacle for Algerian university students to read in English, since they are considered traditional means to foster their reading comprehension as most of Algerian university teachers confirmed. Moreover, students' interest in reading has witnessed a decrease as they are not exposed to their preferable effective instructional reading materials that are compatible with the current technological development. On the basis of these facts; students' inadequate reading comprehension of English reading materials represents the focal problem of this study.

2. Aim of the study

Comprehension is the essence of any reading process whatever the reading material is. It is a fundamental component in learning English as (ESL) or (EFL). It reflects student's mastery of the language. Indeed, achieving a good comprehension is the learners' ultimate goal. Today, with the area of electronic references, such as e-books, learners could easily get reading texts with pressing a button. Thus, the purpose of this study is to diagnose the effect of using electronic books, as reading materials, on EFL students' text- reading comprehension abilities.

3. Research Questions

The current study seeks to answer the following questions:

1/ Does reading E-books improve the reading comprehension of second year English as Foreign Language students, at Abdelhafid Boussouf University, in Mila?

2/ What are the reading strategies that help the students comprehend what they read?

3/ What are the teachers' opinions about the effectiveness of E-books in comparison to printed ones, in the learning process?

4. Hypotheses

As the purpose of the present study is to examine the effect of using electronic books on second year EFL learners' reading comprehension, it is hypothesized that:

On the one hand, the null hypothesis suggests that there is no relationship between E-books and reading comprehension.

H0: There would be no significant difference in reading comprehension between students who are using E-books while reading and those who are using printed books.

On the other hand, the alternative hypothesis suggests that there is a strong relationship between reading electronic books and the improvement of EFL students' reading comprehension. Accordingly, the alternative hypothesis is formulated as:

H1: Student's understanding of the English texts would be improved if they read electronic books.

5. Means of research

To achieve the aim of this study, two significant tools are opted for. The experimental design is the first essential data collection means. Then, a qualitative method, in the form of an interview with teachers, is selected to answer the remaining research questions. The population of the quasi experiment was 232 second year EFL students, at Abdelhafid Boussouf University, in Mila, and the random sample consisted of two groups out of six second year groups. The collected data of the pre-test and the post-test were compared via a t-test analysis.

Concerning the second tool of gathering data, four teachers were interviewed, at Abdelhafid Boussouf University, in Mila. Those four teachers taught different modules that need reading for the improvement of their students' knowledge, level and language.

6. Organization of the Dissertation

The present study is composed of four chapters. It includes a general introduction, four chapters, and a general conclusion. The first two chapters formulate the theoretical part, which cover the literature review of the two provided variables. The next chapters are assigned to the field investigation.

The introduction presents the field of research, in general, the motives behind choosing the topic, the aims and the significance of the study, the research questions and the hypotheses, the different means of research, and the organization of the dissertation.

The first chapter is concerned with reviewing the main theoretical issues related to both reading and reading comprehension. Precisely, it attempts to clarify and describe the most important concepts related to the area of research. It discusses some definitions devoted to the reading skill, in general, and reading comprehension, as the heart of the reading process. In addition to that, it focuses on the models of reading, reading strategies and the components of reading comprehension and its skills.

The second chapter is specified to electronic books. It deals with their definitions, features, advantages and disadvantages, in addition to the differences between e- books and paper-based books.

The third and the fourth chapters represent the practical side of the dissertation; thus, they discuss the methodology used and data analysis. They describe the selected research methods, population, samples and tools used for data collection. They also deal with results discussions and presentations, in addition to some pedagogical implications.

Chapter three focuses on analyzing and interpreting the experimental study. The experiment starts by selecting two groups randomly. The experimental group (EG) and the control group (CG) involve the same number of students (30 students in each group). They have been tested two times; first, at the beginning to check the homogeneity of the sample,

then, at the end of the experiment. The treatment took the form of reading electronic novels, for a period of six weeks. The control group was given the same novels, but they were printed, and to be read within one month and a half. Both groups were asked to write summaries about the previous novels, to be discussed in the class, for other six weeks, then to be evaluated by the teacher. Finally, all the students have been post-tested and the scores of both tests were analyzed using a t-test.

Then, chapter four is devoted to data collection reinforcement through the analysis of the teachers' interview, which is designed to gather data about teachers' personal information, teachers' beliefs about reading comprehension and electronic books. The last section, in the fourth chapter, offers some pedagogical implications and recommendations about the usefulness of reading e-books to improve EFL reading comprehension, in the Algerian educational context. The general conclusion presents the general summary of the whole work. It concludes and sums up the different points seen through the dissertation.

CHAPTER ONE

READING

Introduction

Reading was one of the English language skills that had to be mastered by all the students. Learning a foreign language depended more on reading and searching to have background knowledge about the culture, literature and civilization of that foreign language. So, EFL learners ought to read in order to know more about the language, and also to interact with the others since reading might enable them to learn and acquire language successfully without any difficulties.

This chapter tended to identify key concepts related to reading and reading comprehension, it demonstrated the nature of reading as a process and then, as a product. It also discussed the two types of reading in terms of extensive and intensive. Furthermore, reading strategies and models also were highlighted. At the end, it clarified the concept of reading comprehension assessment and feedback, which were necessary for teachers to make sure that they did an appropriate teaching in order to test and evaluate students' comprehension.

1. Definition of Reading

Giving a clear, straightforward definition of reading was not an easy matter. Many writers and researchers, in the field of psychology, linguistics and language teaching gave different definitions about what reading was. Françoise Grellet (1981, p. 8) who defined reading as "an active skill that constantly involves guessing, predicting, checking and asking oneself questions". That was to say, reading was a language skill that demanded from the reader to guess, predict, think and ask oneself questions in order to comprehend the information from the text. In addition, she stated that "reading is a content process of guessing, and what one brings to the text is often more important than what one finds in it" (1981, p.7). That meant that reading was the process of eliciting meaning and information from a written message. Furthermore, according to Carrel (1988, p. 1), reading was a skill of a

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paramount importance in comparison to speaking and writing, particularly in the EFL/ L2 context. In other words, reading was more important than the other skills for EFL learners. Additionally, Anderson (2003) described reading as "a process of readers' combining information from a text and their own background to build meaning" (Anderson, cited in the CATESOL Journal, 2004, p.13). This meant that reading involved the reader, the text and the interaction between them. The text contained words, sentences, and paragraphs in which the reader decoded the meaning depending on his knowledge and skills.

Moreover, definitions of reading could be ranged from reading being simply a process of "making sense of print" (Smith, 2004, p. 3), to reading being a:

> Complex activity that involves two related processes: word recognition and comprehension. Word recognition refers to the process of perceiving how written symbols correspond to one's spoken language. Comprehension is the process of making sense of words, sentences and connected text. (Pang et al., 2003, p. 6)

In other words, reading was the combination of two processes which were word recognition that referred to the process of determining the meaning and pronunciation of a word, and comprehension which meant understanding.

According to Day and Bamford (1998, p. 2) reading was the construction of meaning from a printed or written message. In this context, meaning construction was processed through the connection of the reader's previous knowledge with the written message to reach comprehension. In the same line, Grabe and Stoller (2002) stated that reading was the ability to decode meaning from the printed text and interpreted this information adequately. That was to say, the reader transmitted the information from the text to achieve the targeted meaning that the text conveyed.

In addition, from the psychological perspective, reading was defined as:

a receptive language process, it is a psycholinguistic process in that it starts with a linguistic surface presentation encoded by writer, and ends with meaning which the reader constructs. Thus, there is an essential interaction between language and thought, the reader encodes language as language and the reader decodes language to thought. (Goodman, 1988, p. 13)

In this context, Goodman believed that the reader should interact with the text to construct meaning by recognizing words, linking sentences and phrases; thus interpreting the meaning.

2.   The Nature of Reading

Just as Alderson (2000) noted, it was commonplace in reading literature to distinguish between the process of reading and the product of reading, which was the result of that process. It was hard to identify the nature of reading, whether it was a process or a product.

2.1.   Reading as a Process

According to Goodman (1988, p. 16), the brain organ was the responsible one for processing information during the reading activity. That was to say, the brain determined which information to keep and which one to reject; it gave orders to stimulate previous knowledge, it decided what method to be used, and where to look for information. In addition, it processed the previous acquired information with minimum efforts and ability.

In this sense, Goodman (1988, p. 16) classified five processes which showed how the brain operated while practicing reading. These processes were:

-Recognition-initiation: At this preliminary step, the brain recognizes the graphic symbols presented in the written language through the eyes.

-Predictions: The brain expects and formulates suppositions as it seeks meaning in the sensory inputs.

-Confirmation: The brain checks and examines its expectations in order to confirm or reject what is predicted.

-Correction: The brain reprocesses when it faces contradictions and oppositions, or what is anticipated is rejected.

-Termination: When the reading activity is finished, the brain ends the reading. However, readers can apply the termination option whenever they face one of such problems: the difficulty of the task, when the material has no sense, the reader has already realized the meaning of the story, or if the story does not fit the readers' purposes.

To sum up, the process of reading referred to what was usually meant by the interaction between a reader and a text. During this process, many things happened. The readers could pass through different operations such as: looking at print, decoding the symbols of the text, recognizing what the symbols meant, and how they were related to each other to build up meaning. Readers were also thinking about what they were reading, i.e., what it meant to them, how it was related to other things they read and knew, and what they expected to come next in the text.

2.2. Reading as a Product

Hollander (1975) regarded reading as "a process and its final outcome is comprehension of the input" (p. 553). Thus, comprehension was the readers' mental capacity of interpreting and understanding the written letters to construct meaning. In order to do so, readers tried to relate what they were reading to what they already knew, i.e., linking new knowledge to prior knowledge and past experiences to infer the invisible meaning (Booth, 1998). Therefore, Gray (1960) distinguished three levels that could contribute to reading comprehension (cited in Alderson, 2000, p. 8).

a. Reading the lines: Which refers to the literal comprehension in order to identify the linguistic forms as well as to differentiate between the syntactic structures.

b. Reading between the lines: This means understanding the hidden meaning by making inferences based on the context or on the knowledge of the world.

c. Reading beyond the lines: it is the higher level of comprehension which involves the readers' interpretations and evaluations of the text.

These three levels were ordered in a hierarchical manner from the most difficult to the easiest one.

3.   Types of Reading

Readers differed from each other, some of them read for general information and others read for specific information. It depended on the reader's purpose. In this context, Suparman (2005, p.1)) stated that "there are two types for reading: reading for pleasure and reading for information". Thus, there were two common types of reading which were distinguished by different scholars. The first type was extensive reading, and the second one was intensive reading.

3.1.   Extensive Reading

Extensive reading meant reading for pleasure and relaxation. The purpose of the reader was enjoyment. It was a kind of reading which the students did outside the classroom where they selected their own reading texts. According to Palmer (1964), extensive reading was described as "rapidly reading book after book." Also, he contrasted it explicitly with intensive reading or "to take a text and study it line by line" (Palmer, 1964, p. 111, cited in Day & Bamford, 1998, p. 5). These definitions focused on the quantity of materials being read. Moreover, Grellet (2008) emphasized that "Extensive reading includes long texts, usually one's own pleasure. This was a fluency activity mainly involving global understanding". Furthermore, Krashen (1993) argued that "reading is good for you. The research supports a strong conclusion…Reading is the only way we become good readers, develop a good writing style, an adequate vocabulary, advanced grammar, and the only way we become good spellers" (Krashen cited in Jacobs and Farrell, 2012, p. 101). That was to say, extensive reading was very important since it helped in improving both reading and writing skills. Also

it enhanced pronunciation especially aloud reading. Thus, extensive reading was essential for language teaching.

3.2. Intensive Reading

Intensive reading was an activity that involved learners reading in details, for specific goals, and maximum comprehension. It required a careful concentrated reading to have a clear picture of the text at hand. In addition, intensive reading aimed to "help students obtain detailed meaning from the text" (Renandya, 2007, p.135). In this type of reading, teachers might ask their students to read short texts, magazines, poems, and Internet websites to elicit specific information and extract the exact meaning. Palmer (1968) argued:

> Intensive reading tends to teach reading as a set of component skills and usually refers to careful close reading …of shorter, more difficult foreign language texts with the goal of deeper detailed understanding. Texts are studied intensively in order to introduce and practice reading skills that are distinct. (Palmer cited in Thomas, 2009, p. 387)

This meant that students read short texts which helped them to acquire fundamental reading strategies and develop their comprehension. Nuttall (1996, p. 38), on the other hand, stated that "Intensive reading involves approaching the text under the guidance of a teacher . . . or a task which forces the student to focus on the text. The aim is to arrive at an understanding, not only of what the text means, but of how the meaning is produced." That was to say, students read short passages carefully with deep understanding of the language features to obtain specific information from the text, and it was done under the guidance of the teacher to confirm his student's comprehension. Thus, intensive reading was a teacher-centered method. Day and Bamford (1998, p. 05) also defined intensive reading as "to take a text, referring at every moment to our dictionary and our grammar, comparing, analyzing, translating and retaining every expression that it contains". This meant that the reader should pay attention to

words and sentences, to meaning construction depending on previous knowledge, and to analyze the linguistic characteristics of the text such as vocabulary, syntax, and discourse. In other words, the purpose behind intensive reading was to take a text and study it in a deep way by focusing on grammar, vocabulary and its expressions. It was called intensive because it focused on the way readers read smaller pieces of discourse. However, for Harmer (2007), to maximize reading benefits, there should be a balance between extensive and intensive reading. Anderson (1991, p. 59) stated that:

> It is my belief that good readers do more extensive reading than intensive reading. But what makes the good reader a good reader is that he/she has developed the strategies and skills through intensive reading that are transferred to extensive reading contexts.

Thus, Anderson showed the need of mixing both sorts of reading for developing learners' language and helping them to be lifelong readers. All in all, it was supposed to make equilibrium between these two types and to raise learners' awareness about their importance.

4. Reading Strategies

Skimming and scanning were parts of reading strategies that could be applied by teachers to improve students reading comprehension. While Scanning was searching for particular information, skimming was to get a general idea about what has been read. These two strategies would be discussed in details as followed:

4.1. Scanning

Scanning referred to the readers' search for specific information within a text such as dates, names, and places. Brown (2001, p. 308) defined scanning as:

> Scanning is a quickly searching for some particular piece of information in a text. Scanning exercises may ask students to look for names or dates, to find a definition

of a key concept, or to list a certain number of supporting details. The purpose of scanning is to extract specific information without reading through the whole text.

In other words, scanning was a rapid process that did not require reading everything in details. Furthermore, Williams (1996) argued that scanning occurred when a reader went through a text very quickly in order to find a particular point of information. This meant that the students swept their eyes over a text to get certain information they were looking for. Thus, the purpose of scanning was to deduce specific information without reading the whole text. Françoise Grellet (1981, p.19), on the other hand, claimed that scanning was "to locate specific information and often we do not even follow the linearity of the passage to do so". In Grellet's view, the reader was able to read the text in a spiral approach to extract the information without reading the entire text. Nuttal (1982) gave a definition to scanning as:

Glancing rapidly through a text either to search for a specific piece of information, e.g., a name or a date or to get an initial impression of whether the text is suitable for a given purpose, e.g., whether a book on gardening deals with the cultivation of a particular vegetable. (p. 34)

This meant that scanning was a strategy that allowed readers to look carefully, in the text, for particular information, to see whether it was suitable for a specific purpose or not.

4.2.   Skimming

Skimming was unlike scanning, according to Brown (2004) "skimming is the process of rapid coverage of reading matter to determine its gist or main idea" (p. 213). In the same sense, Grabe and Stoller (2002) stated that "skimming is a specialized type of reading in which the reader reads quickly for a general understanding of the text and for the gist of the passage" (p. 266). It meant that skimming was to read rapidly to get the general meaning of the passage. Richards and Schmidt also confirmed that "skimming involves the use of strategies for guessing where important information might be in a text and then using basic

reading comprehension skills on those parts of the text until a general idea of its meaning is reached" (2010, p. 532).This meant that students skim was when they guessed where the needed information was located in a text until they reached the general understanding. Furthermore, Grellet stated that skimming was "a more thorough activity which requires an overall view of the text and implies a definite reading competence" (1981, p. 19). That was to say, skimming was an activity in which students got the overall idea without concentrating on the details. Therefore, the purpose of skimming was to know what a text was about, and its overall message.

5. The Reading Models

Teaching reading was essential because the more you read the more you learnt better. Many researchers and scholars were still arguing about what reading was. Depending on their interpretation of the reading process, they had developed a model of reading. According to Grabe (2009, p. 83), "a model refers to a representation of the psychological process that comprises a component or a set of components involved in human text comprehension". It meant that the model of reading might simplify the process of reading and what you needed to do to reach understanding. As a result, reading models were set in order to explain the reading process. This was what led to the raise of three main models of reading namely: bottom-up model, top-down model and interactive model.

5.1. The Bottom-Up Model

Nunan (1991) explained the bottom-up notion of reading as "a matter of decoding a series of written symbols into their aural equivalents" (p. 64). In this model, readers started with decoding the smallest units in a text, such as letters into their synonymous sounds to build up a meaning and a sense of texts. Furthermore, this model referred to the view that reading was a process of building letters into words, words into sentences, phrases and then proceeded to the overall meaning. Gough (1972) thought that the reading process began when

the eye and the letters came to interact. Though the initial eye contact with letters was rapid, it formed an iconic representation which led to text encoding, then to meanings.

The bottom up model followed a reading process that could be represented as:

1. Eye looks;

2. Letters identified and sounded out;

3. Words recognized;

4. Words allocated to grammatical class and sentence structure;

5. Sentences give meaning;

6. Meaning leads to thinking. (Davies, 1995, p. 58)

That meant the sequence of processing was from letters, to sounds, to words, to sentences, and finally to meaning.

In fact, this model came under attack and was criticized for having some weaknesses such as: the idea of linear processing underestimated the contribution of the reader, and failed to recognize that students utilized their expectations about the text, based on their knowledge of language and how it worked, in addition to the failure to include previous experience and knowledge into processing.

5.2. The Top-Down Model

The top- down model was the opposite of the previous one since it involved thinking and meaning as the first steps. Goodman (1967) and Smith (1971) were the proponents of this reading model. Goodman stated that "… the goal of reading is constructing meaning in response to text…It requires interactive use of grapho-phonic, syntactic, and semantic cues to construct meaning."(1981). Frank Smith, on the other hand, said that "reading is not decoding written language to spoken language". For example, learners were taught to identify entire words rather than combinations of sounds. Moreover, Tracey and Morrow illustrated that top-down models "are built on the assumption that the reading process is primarily driven by what

is in the reader's head rather than by what is on the printed page" (2017, p.204). In other words, the top down model was a process in which the readers draw their own intelligence and experience to comprehend a text. Along with this, Nuttall specified that: "A reader adopts an eagle's eye view of the text when he considers it as a whole and relates it to his own knowledge and experience. This enables him to predict the writer's purpose" (1996, p. 17). This meant that readers swept their eyes through the text depending on their assumptions to get out the necessary information. In addition, the top-down model was experience-based. In short, this model relied on students mastering skills through experience.

On the same line, Matland also added that:

> To increase the level of efficiency, top down theorists, thus, demand a clear statement of the policy goals, a minimization of the number of involved actors, a limitation of the extent of change necessary and to find an institution which supports the point of view of the policy makers in order to guarantee that, the implementers sympathize with the new statute. (1995, p. 147)

That was to say, the approach obviously favored the decision-makers as key actors within the process of implementation, and did not pay much attention to the administrative staff that carried out the legal act. Furthermore, Davis (1995, p.58) illustrated the top-down model process order as:

1- Eyes look;

2- Thinking- prediction about meaning;

3- Sample sentence as a whole to check meaning;

4- To check further, look at words;

5- If still uncertain study letters;

6- Back to meaning prediction.

In other words, the reader started by forming predictions (or guesses) about what was in the text. Then, after predictions for seeking meaning of the text were formed, the reader tested their correctness permitting gathering evidence, confirming, or rejecting them (predictions). This latter could be done by making use of whatever relevant information supplied in the text, i.e., using 'text cues'.

In fact, the major weakness of the top-down model was its over dependence on the background information of the reader who might fail to confirm his/her prediction. It was also criticized for insufficient address of lower-level processes; for example, Treiman (2001, p. 4) stated that "skilled readers fixate at least once on the majority of words in a text. They do not skip a large number of words, as the top-down view predicts, but instead process the letters and words rather thoroughly". Above all, the perceptual and decoding dimensions still had an essential role to play in fluent reading. Another criticism was the unclear portrayal of the mechanisms used by the reader to generate appropriate inferences (Grabe, 2009).

Finally, it could be said that, in this model, the reader used his previous knowledge starting with the largest element and put it down towards the smallest units to construct his/her comprehension of what was being read.

5.3.   The Interactive Model

After the failure of the bottom up and top down models in providing an adequate explanation for the reading process, the interactive model combined both models to come up with better clarification for the reading process. It attempted to make both bottom-up and top down models work together. This model suggested that the reading process was initiated by formulating hypotheses about meaning and by decoding letters and words (Vacca et al, 2006). Which meant that, in the reading process, the reader got the meaning of the text by combining the two models; the reader decoded graphics and recognized words by making interpretations based on what he/she had already experienced. Furthermore, according to Rumelhart (1977),

reading was an interactive process, which included both perceptual and cognitive process. In other words, this process consisted of an interaction between different orthographic, syntactic lexical and semantic information, until the meaning was gained. In addition to that, Alderson (2000) pointed out that "the whole reading process is not an 'either/or' selection between the bottom-up and top-down models, but involves the interaction between both approaches" (p.38).

To sum up, the interactive model provided a logic explanation in which reading involved processing all levels together. That was to say; the reader decoded graphics and recognized words by making interpretations based on what he/she had already experienced. This interactive model could maximize the strengths and minimize the weaknesses of both bottom-up and top-down models. Moreover, these models were useful and helpful ways that participated in facilitating the reading act.

6. Definition of Reading Comprehension

Reading without comprehension was useless. Many linguists defined reading comprehension in various ways. However, they agreed that reading comprehension was the reader's ability to understand written materials.

Howell and Morehead (1993) defined reading comprehension as followed: "reading comprehension is the act of combining information in a passage with prior knowledge in order to construct meaning" (p. 182). That was to say, reading comprehension was the ability to catch the meaning of words while reading relying on both experiential background and information from the text. In the same sense, Paris (2008) added that "comprehension means making sense of words, connecting ideas between texts and prior knowledge, constructing and negotiating meaning in discussion with others" (2008, p. 1). It meant that the comprehension of a text needed to get words meaning, to combine the previous experience with the ideas in the text, and also built up meaning through interaction with others.

In addition, Grellet stated that "reading comprehension means understanding a written text to extract the required information from it as efficiently as possible" (1981, p. 182). She explained that reading comprehension was to understand the passage in order to obtain the required information from it. Grellet (1981) stated that there were three main factors that had an impact on the comprehension of any text: the type of the reading text, the aim of reading a passage, and the strategy of reading the reader follow. The aim, therefore, was to gain an overall understanding of what was described in the text rather than to obtain meaning from isolated words or sentences (Woolley, 2011).

Moreover, according to Seyed et al. (2010), comprehension referred to "the ability to go beyond the words, to understand the ideas conveyed in the entire text". Furthermore, Snow (2002) saw that reading comprehension referred to the "simultaneous ability used by a reader to construct and extract meaning through interaction and involvement with written materials". It meant the ability of extracting meaning from the text and understanding what had been read. It was a sort of thinking during which meaning was created between the reader and the text.

In short, reading comprehension was the process of constructing meaning from a text based on background knowledge and information from the text.

7. Reading Comprehension Skills

Research studies on reading and comprehension have shown that highly proficient readers utilized a number of different skills to understand various types of texts, skills that could also be used by less proficient readers in order to enhance their comprehension. These skills were particularly necessary for comprehending what was generally known as information reading or expository reading. Thus, the key comprehension skills were described below.

7.1. Predicting

Predicting was a strategy in which readers were able to get meaning from a text by making guesses. It was more than just guessing what was going to happen next, it helped students become more active in the reading process and helped to keep their interest level high. Françoise Grellet (1981, p. 17), stated that "It is a faculty of predicting or guessing what is to come next, making use of grammatical, logical and cultural clues". This meant that, predicting was to guess what would come next in the text while reading. According to her, 'predicting' was the faculty of guessing what was to come next. She suggested an exercise by giving the students unfinished passages to complete or by going through a text little by little stopping after each sentence in order to predict what was likely to come next. Smith (1988) also conceived predicting as the core of reading comprehension because it was central to the top-down model of the reading process as it orientated any reading act. Goodman (1967, 1971, 1973), on the other hand, brought new insights to reading. His definition of reading attributed paramount importance to prediction. He stated that "reading is a psycholinguistic game in which the reader contributes as best as he can a message which has been encoded by a writer as a graphic display".

In brief, predicting, as a skill, was important because making predictions about the text before, during, and after reading, made readers use what they already knew and what they supposed might happen to make connections to the text.

7.2. Inferring

Inference was a "foundational skill" — a prerequisite for higher-order thinking and 21st century skills (Marzano, 2010). Making an inference involved using what you knew to make a guess about what you didn't know or reading between the lines. This strategy helped students to develop their thinking skills. Françoise Grellet (1981, p. 14) claimed that "inferring means making use of syntactic, logical and cultural clues to discover the meaning of unknown

elements". This meant that writers provided the reader with some key words which helped them to understand ambiguous words by relying on their background knowledge. Moreover, Nuttall (1996, p. 114) argued that "Inference is the process that readers use to draw implications and certain conclusions from facts, opinions and arguments stated in the text".

To sum up, inference strategy assumed that teachers got students to make a guess of the meaning of the words they did not know rather than to look them up in the dictionary.

7.3. Monitoring

Comprehension monitoring was another strategy that had touched many researchers attention. It was a process in which readers determined whether they had understood what they were reading. Comprehension monitoring was the ongoing activity of evaluating and regulating one's understanding of written or spoken text (Baker & Brown, 1984a, 1984b).

According to Garner (1987), while monitoring their comprehension, good readers knew what to do when they encountered a problem. It meant, in monitoring, they anticipated that problems would arise, and took action to solve them when they did. In brief, monitoring our comprehension meant noticing our thinking while we were reading, using our background knowledge, and recognizing when something was new.

7.4. Visualizing

Visualizing was a skill that could be helpful in many domains, and while it was often associated with teaching early readers, even experienced readers could benefit from practice with this skill.

In the related literature, visualization was defined as "the process of seeing pictures in the mind" (Tomlinson, 1997, p. 1). In other words, visualization referred to our ability to make visual representations in our minds while reading. Moreover, according to Puett Miller (2004), visualization was a proven strategy used to improve reading comprehension. That was to say, visualization was an important way to enhance our comprehension of the reading

material. Furthermore, some people thought of it as making videos or movies in their heads. It also had many benefits such as: helping readers engage in text, in ways that made it worth remembering, motivating the imagination, improving involvement in the text, and enhancing mental imagery. Thus, when students created strong mental pictures in their minds, they became more involved in the text, had better recall, created more connection, asked more questions, and had a deeper comprehension of the text.

To sum up, visualizing strengthened reading comprehension skills as students gained a more thorough understanding of the text they were reading by consciously using the words to create mental images.

7.5. Previewing

Previewing was a strategy that readers used to recall prior knowledge and set a purpose for reading. It called for readers to skim a text before reading, looking for various features and information that would help as they returned to read it in detail later. Graves, Prenn, and Cooke (1985) stated that previewing referred to the activity in which a written and oral preview was presented to students before they read a reading selection. In other words, previewing was a skill of learning about a text before reading it. In addition, according to Graves, Cooke, and LaBerge (1983), previews were "introductory materials presented to students before they read specific selections" (p. 264). That was to say, a preview was an introductory passage provided to students, in advance of their actual confrontation of the reading selection, to help promoted comprehension. Moreover, readers used this strategy to help them decide whether a book or a journal was useful for their purpose; to get a general idea of the article structure, to help them determine relevant information; to help them identify the parts of the text they might need to read and the parts they could ignore. Furthermore, to preview, started by:

- reading the title and author details.

- reading the abstract (if there was one).

-Then reading only the parts that 'jump out'; that was: main headings and subheadings, chapter summaries, any highlighted text etc.

-Examining any illustrations, graphs, tables or diagrams and their captions, as these usually summarized the content of large parts of a text.

- reading the first sentence in each paragraph.

To conclude, previewing was a pre-reading skill by which the reader tried to gather as much information about the text as he/she could before reading it. It saved time, got an idea of what the text was about and gave a kind of overview. This simple skill included seeing what learners could learn from the headnotes or other introductory material, skimming to get an idea of the content, and taking a look at how the text was ordered.

7.6. Summarizing

By taking the importance of comprehension process into account, researchers had to fulfill the problem of identifying the best strategy for the purpose of contributing to its development. According to Corder-Ponce (2000), "summarization is probably the most significant and encompassing of all reading strategies available to the learner for effective studying and comprehension." (p. 330). That was to say, summarizing was an important strategy to learners to reach comprehension when reading a text.

In addition, summarizing was about finding the key ideas of the text. Duke and Pearson (2002) showed that "instruction and practice in summarizing not only improve students' ability to summarize texts, but also their overall comprehension of text content" (p.221). This meant that the purpose behind summarizing was not just enhancing the students' capacity to summarize, but also their general understanding of what they read. Moreover, Buckley (2004), in her popular writing text *Fit to Print*, defined summarizing as reducing text to one-third or one-quarter its original size, clearly articulating the author's meaning, and retaining

main ideas. In other words, after understanding the author's purpose of writing the text, students could determine what was important, and then put it in their own words in a small size text. Furthermore, the NSW (New South Wales) centre for Effective Reading (2013, p. 106) stated six steps for creating a summary:

1. List the main ideas;

2. Underline the most important;

3. Combine any you can;

4. Number in order;

5. Write the summary;

6. Edit the summary.

To sum up, summarizing taught students how to extract the key points in a text, how to disregard irrelevant information, and how to put the important ideas in a meaningful way. In addition, teaching students to summarize improved their memory for what was read, increased their comprehension, taught them to pick out necessary information, and how to reduce a long piece of text using crucial information.

8. Assessment

Assessment was the process of knowing about how students were progressing in their learning to make the right decision in planning classroom instruction. According to Pressley (2002) as cited in the article entitled *Key Issues in L2 Reading Development*, good readers reacted for careful comprehension, and they actively engaged in academic texts through multiple strategies that could be summarized in the identification of the important information in the text, making guesses about unknown words, following the text structure to guide the understanding and making interpretation as they read, summarizing the main idea and reflecting on the information in the passage (Grabe, n.d.).

Assessment of reading comprehension required measuring basic skills of the learners as, for example, checking their understanding of the text and developing their comprehension abilities. In EFL classes, teachers should make sure that those skills were assessed in an effective way with clear and specific activities to foster the pupils' reading comprehension skills. To deal with the issue of assessment of reading comprehension skills, the study relied on Davis' theory (1944). He suggested nine basic skills to be measured when assessing reading comprehension. They were as followed:

1. Knowledge of word meanings and vocabulary.

2. Ability to select the appropriate meaning for a word or a phrase in the light of its particular contextual setting.

3. Ability to follow the organization of a passage and to identify antecedents and references in it.

4. Ability to select the main thought of a passage.

5. Ability to answer questions that are specifically answered in a passage.

6. Ability to answer questions that are answered in a passage but not in the words in which the question is asked.

7. Ability to draw inferences from a passage about its contents.

8. Ability to recognize the literary devices used in a passage and to determine its tone and mood.

9. Ability to determine a writer's purpose, intent, and point of view, i.e., to draw inferences about a writer. (Davis, cited in Afflerbach et al., 2008, p. 367)

It meant that to make a successful assessment of reading comprehension in the class, the task should be based on some techniques that aimed at measuring essential skills of the learners. Those skills could be summarized as followed: first, testing the vocabulary knowledge of the learners which meant asking them to find the meaning and the opposite of

words found in the text. Second, asking the learners to answer questions that were answered in the text in order to check the learners' comprehension of the passage. Third, asking the learners to summarize ideas of the text and to draw a conclusion from the general understanding of the passage. Finally, asking the learners to identify the type of the text and the author's purpose from writing the passage helped in determining the mood and the tone of the text.

9. Feedback

Feedback was a powerful tool that teachers had easy access to and it was a common component of successful teaching and learning. Based on research results, some researchers postulated that feedback in learning and teaching was beneficial for learners (Bitchner, 2008; Evan, Hartshorn, & Strong-Krause, 2011; Leki, 1991, as cited in Bdioui, 2017). In other words, feedback was an essential part of effective learning. It helped students understand the subject being studied and gave them clear guidance on how to improve their learning. In addition, based on Hattie and Timperley's work (2007), feedback could be defined as "information provided by an agent with respect to one's performance or understanding" (81). That was to say, feedback was conceptualized as information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or comprehension. A teacher or parent could give corrective information, a peer could provide a substitutional strategy, a book could provide information to explain ideas, a parent could give encouragement, and a learner could search for the answer to evaluate the correctness of a response. Feedback, thus, was a consequence of performance. Moreover, the primary purpose of feedback was to help learners adjusted their thinking and behaviors to produce improved learning outcomes (Shute, 2008). This definition showed the difference between feedback and other types of information that might be given to learners such as a summative evaluation or praise.

To sum up, feedback was a process of giving information in a way that encouraged the recipient to accept it, reflect on it, learn from it, and hopefully make changes for the better. Being able to provide feedback was a skill that was beneficial in learners' personal and professional lives.

Conclusion

To sum up, reading was a very important skill that students needed to master as early as possible. However, the process of mastering reading was actually not easy, and that could be noticed by the low number of students who were skilled in reading. So reading was a cooperative task between writers and readers via a text; the writer encoded the message, and the reader decoded it. In the reading process, the reader activated his prior knowledge to extract and construct meaning from the text to link what he knew with the information he found.

CHAPTER TWO

E-BOOKS

Introduction

In the past few years, the increased accessibility of technological devices made it easier for educators to make use of multimodal tools in the classroom settings. Thus, students had the ability to access a wide variety of reading technologies. Teachers were now able to do interactive reading aloud with the class using smart boards. In addition, students were able to complete reading assessments through multiple effective computer programs and also might have iPads, tablets, or computers at home that they used for entertainment purposes. These technological tools were leading to gaining student attention and interest. Therefore, e-books started to become the mainstream phenomenon within the last decade and its use could be effective for educational development.

This chapter gave a clear image about the concept of e-books showing its various definitions by multiple scholars. In addition, it clarified its features which were helpful for any reader and made this form of reading better than its counterpart (p-books). Then, it explored the advantages and disadvantages of e-books that should be taken into consideration.

Furthermore, it revealed their types, what an e-book reader was and the comparison between e-books and traditional ones. This latter showed that e-books were by far more convenient, flexible and easy to deal with than printed books. At the end, this part dealt with the effect of e-books on reading comprehension. Therefore, according to the following discussion, e- books had a great influence on improving student's reading comprehension.

1.   Definition of E-books

There were various definitions conducted by many scholars and researchers to explain the concept of "e-books". According to Lynch (2001), an e-book was defined as:

> The large structured collection of bits that can be transported on CD-ROM or other
>
> storage media or delivered over a network connection, and which is designed to be
>
> viewed on some combination of hardware and software   ranging from dumb

terminals to Web browsers on personal computers to the new book reading appliances. (Cited in Suarez, 2013, p. 283)

That was to say, an e-book was designed to be read, using personal computer, or by using software and hardware applications for use on a computer as a reading device. In addition to that, it could be transported on a diskette or a CD or many storage media.

Moreover, Bennett and Landoni (2005) stated that an e-book was a medium where information was organized and structured for the reader to facilitate consultation that at least included browsing, searching, extracting, comparing and assessing relevance and quality of information presented. That was to say, an electronic book was a means that included and ordered information for the reader to simplify reading. Furthermore, Brown and Coe (2012) considered an e-book as "Book-length publications in digital form, either "born-digital" or derived from a printed version" (p. 289).

Reitz (2014, p. 494) defined an e-book as:

A digital version of a traditional print book designed to be read on a personal computer or an e-book reader (a software application for use on a standard-sized computer or a book-sized computer used solely as a reading device); synonymous with digital book, e-book, ebook, and online book.

For Reitz, an e-book was a digital version of a printed book, which was designed to be used on digital devices such as computers.

Vassiliou and Rowley (2008), through their analysis study of different definitions, had ultimately agreed that the meaning of an e-book incorporated the online format of inked-book, which could be uploaded via hardware and software assisted programs, also the term e-book could be used to label the new invented e-reader book which was designed to read books electronically with approval features of printed books such as kindle. This definition was subject to change due to the development of e-book characteristics day after the other. In

general, Rao (2001) had comprehensively introduced an e-book as an original print version which was transformed into an electronic format to be submitted on a screen of a digital device including mobile phone, laptop, and desktop computer, which could also be read over a notebook, or any specific e-reader appliance.

In addition to that, Abdullah and Gibb (2008) referred to e-books as both the electronic contents and the computerized devices used to store and retrieve information through the use of automated textual storage and retrieval development.

Although these definitions were slightly different, they shared a common understanding of e-books as electronic versions of traditional print books that could be converted in multiple formats to be read through multiple media and tools with Internet connectivity.

2.   Features of E-books

E-books contained a variety of features that made them the most preferred form of reading than p-books. Cavanaugh (2006) listed common features that any e-book might include; the first valuable feature of e-books was its availability in a virtual space at no cost, which offered people an opportunity to read free online books. That was to say, it was easier and did not cost much for readers; they just read online. Additionally, some sophisticated e-books had the advantage of allowing users to draw extra information about the difficult words by clicking on web links. Besides, the accessibility of dictionaries was another benefit of using electronic books. More importantly, teachers who integrated e-books, in their courses, would directly promote their students' reading capacities.

Cavanaugh(2006) had further mentioned that the prototype way of representing a digital text was no longer as before since the new e-books versions were associated with software and hardware intermediate programs, which worked together to represent the passage in one block without passing pages. As they were published on the web, the pages could be read in a vertical or horizontal orientation with the potential of regulating the text

size and highlighting the important parts in the text. In addition, Larson (2009) mentioned that e-books permitted users to type comments that were automatically preserved in one file through pressing on notes or annotations. In other words, students could often add notes on the e-book in which they were saved between sessions and were available to them anytime when they opened the e-book.

Furthermore, Rao (2001) considered e-books as one of the best inventions in the literary world after the Gutenberg Project. As they offered new facilities for readers to get over the limitations of paper books in terms of their reactant formats, they allowed users to renew the content whenever they wanted (Landoni & Gibb, 2000). So, e-books provided many benefits for the students as they created an enthusiastic atmosphere conductive for their studies.

3.   Advantages of E-books

Research proved that e-books offered numerous benefits. Tracey and Morrow (2002) viewed the content of a text, especially the difficulty or readability, as being based upon font size and type as a factor in reader-text interaction and comprehension. E-readers had the capability to negate font distractions by allowing individual readers to adjust surface features (Abram, 2010; Larson, 2009). Additionally, e-books had been cited as being convenient, lightweight, environmentally friendly, portable, and easily stored (Clark et. al., 2008; Jamali et. al., 2009; Shepperd et. al., 2008). E-books were also never out of stock since they were downloadable (Crestani, Landoni, & Melucci, 2005). Additional advantages cited were updatable book versions, linkage of passages, and keyword searchability (Armstrong, Nardini, McCracken, Lugg, & Johnson, 2009; Crestani et. al., 2005; Jamali et. al., 2009). Moreover, e-books were multimedia format. Unlike printed books, they could contain not only text and images, but also an audio and even a video. Hence, if the reader was not the type of a person who liked to read paragraphs of a text, he or she could choose to listen to the audio version.

Clark (cited in Wells, 2012) listed some of the benefits of e-books; accessibility,

portability and storage. E-readers had the ability to allow font detraction, so that the features could be adjusted (Wells, 2012). Most of these resources could be stored in external hard drive to avoid the situation of being out of stock. These benefits of e-books made them a very useful tool to support teaching and research. According to Armstrong and Lonsdale (2009), "E-books minimize heavy circulation pressure including no issue/no return/no fine matters. They are also beneficial when the printed counterpart has no-loan or short loan restriction".

Another advantage of e-books was that they were searchable. There were a number of e-books that contained a search button, which allowed you to quickly jump to the page containing the word you were interested in. So, it was easier than searching the words in dictionaries. In addition to that, e-books had the advantage of saving space in the library and creating constant access to books. Library users, when faced with an information need, could access the library online without going to the physical library building.

Renner (2007) identified the following advantages of e-books: expanded offering, expanded usage, reduced personnel required, reduced maintenance costs and enhanced functionality and usage statistics.

To sum up, e-books had many merits such as convenience, being easy to access, being accessible at all times, many users could use a book at the same time, the ability to link to relevant reference sources, the ability to take notes and the ability to search within the text. They were becoming more and more popular among people, but everything had two sides.

4.   Disadvantages of E-books

Now, more and more people preferred e-books to traditional ones because they could save their time and money. However, with various e-books flooded in, more and more people were aware of their disadvantages. The fact that e-books required special devices or personal computers could be looked as a disadvantage; this was so because not all the people did own such devices. In addition to that, since e-books depended on hardware and software, they were

more easily damaged than a printed book. In other words, e-books were not forever or at least did not last for too long as printed books did.

Moreover, reading from a screen could cause greater eye fatigue (Clark et. al., 2008; Gunter, 2005; Jamali et. al., 2009; Kang et. al., 2009; Lam et. al., 2009). Students have indicated that they were more likely to skim electronic texts, choosing to read in an "F" pattern; F pattern was considered as an eye tracking visualization which showed that users often read web pages in an F-shaped pattern: two horizontal stripes followed by a vertical stripe. F stood for fast, which was how users read precious content. In few seconds, their eyes moved at amazing speed across website words in a pattern that was very different from what they learned in school (Nielsen, 2006), i.e., searching for key words rather than line by line reading (Woody et. al., 2010). This meant that eyes train and screen glare were a serious concern for many users of e-books that became quite a health problem. Moreover, students cited difficulty in taking notes using an e-book as a significant drawback (Polanka, 2011).

Furthermore, reading from a device lacked the comfort of reading from a paper based book. It lacked the feeling of turning pages, opening, and flipping through the book because an electronic text was hard to navigate.

Most studies in Africa revealed a low use of e-resources especially e-books. For instance, Agaba (2003), Connaway and Wicht (2007), Jenkins (2008), Harle (2009), Bassi and Camble (2011), Maepa and Nkosi (2013), Ikoja-Odongo (2013) identified the following factors as barriers for the adoption of e-books:

✓ Lack of standard formats for e-books and hardware developments.

✓ Incompatible rights and operability.

✓ Unrealistic prices.

✓ Inconsistent purchase model.

✓ Limited editions.

In brief, many people now were reading electronic books, but it could not be said that they have replaced the paper-based books. However, a lot of people still preferred using paper books because of the many disadvantages that electronic books had.

5. Types of E-books

There were four types of e-books which were known as: downloadable e-books, dedicated e-book readers, print-on-demand books, and web-accessible e-books (Belkar, 2012).

For downloadable e-books, the reader could download e-books on his computer from the Internet where everything was available. In addition, he did not need any special reading devices. In other words, because of the instant availability of e-books on Internet, e-books never went out of stock. Once you purchased an e-book, you could download it instantly and start reading it. There was no need to wait for the delivery of the book (Belkar, 2012).

The focal issue of the dedicated e-book readers was that the content was downloaded to a dedicated hardware device with a high quality screen and exceptional capabilities for reading books. They were light and portable, relatively inexpensive, and used a paper-like screen technology called E Ink. This worked well in bright light and used very little power enabling e-books to be read for long periods without needing to recharge the battery (Belkar, 2012).

The third type was called print-on-demand books. Their content was stored in a system linked to a high speed. Moreover, high quality printer and bound copies were produced on demand. This type of e-books made printing books way easier, faster, and more cost-effective than conventional counterparts. The books were available on international markets, making it easy for the audience to purchase and get them at their doorstep (Belkar, 2012).

The idea of the web-accessible e-books revolved around the fact that books were published on the provider's web site. They might be accessed for free or bought by receiving

the books in a definite access. Web accessibility could make it easier for people to find a website, access it, and use it successfully, thus, resulting in increased audience and increased effectiveness. In addition to that, it decreased the need for creating multiple versions of a site for different devices when accessibility enabled content to work on different devices. Furthermore, according to Cawford (as cited in Belkar, 2012), there were also a number of types of e-books such as: proprietary e-book devices, open e-books, free books or public domain e-books, and instant books.

6.   E-book Reader

An e-book reader or an e-reader was a portable hardware device designed for the purpose of reading digital books, publications, documents, electronic magazines and newspapers, and periodicals. Most e-readers could store thousands of books and other publications because textual data did not demand a lot of storage space. Barron (2011) claimed that e-readers were electronic devices displaying digital texts such as books, portable document format files (PDFs), word processing documents, and a variety of other text formats. Furthermore, e-readers often now had an interactive dictionary that was one click away as well. Some e-readers allowed readers to listen to the whole book rather than reading it themselves. According to Kimmel, "Reading is about making connections, and these e-readers can connect to students on multiple levels unlike paper books'' (2012, p. 10). That was to say, unlike p-books, e-readers were linked to students at various levels. The relationship between reading and author, the reading experience, and the book itself were all evolving in this new technologically advanced society. This meant that some young people were embracing books and reading like they never did before (Valenza & Stephens, 2012). E-readers also had a matte finish and high contrast, so they could be read in a direct sunlight without a glare unlike computer screens (Connell, Bayliss & Farmer, 2012).

Moreover, e-book readers were similar to a tablet computer. They typically had wireless

connectivity for downloading content and conducting other web-based tasks. Furthermore, just like an iPod (Internet Portable Open Database) which could store an entire music library, a single e-reader could store a vast collection of books. E-reader applications also were available for Mac (Media Access Control) and PC (Personal Computer) computers as well as for Android, iOS (iPhone Operating System) and Windows Phone devices. Therefore, the movement toward reading on personal devices had been on the rise since Amazon Kindle was introduced in 2007, followed by devices marketed by Barnes and Noble, Apple, and Sony (Jones & Brown, 2011). In short, one of these popular dedicated e-readers was the Amazon Kindle and Sony reader. The Sony Reader was one of the earliest e-readers. It was launched in 2005. Sony Reader PRS 700 weighed 10 ounces and featured a 6" display. A touch screen featured a virtual keyboard for navigation and note taking and there was an LED light built in for reading in low light conditions. One charge was good for 7500 page turns and the device had 512 MB of memory. Amazon Kindle, on the other hand, was a portable e-book reader developed by Amazon and launched in 2007. Amazon Kindle 2 weighed 10.2 ounces and had a 6 display. The device featured a small built-in keyboard beneath the display. Kindle supported limited text search and user-accessible memory was 1.4 GB enough for 1500 books. The Kindle DX had a 9.7" display. The Kindle was also easy on the eyes, and auto adjusted its brightness level to be the same as everything else in the room. This meant that the reader's eyes did not have to adjust, which could result in fatigue over time. It was lighter than an actual printed paperback, which meant it was comfortable to hold for long periods of time. The fonts were hand-built which improved the text and image quality. Moreover, the Kindle had many features such as the Smart Lookup tool which allowed readers to access definitions while they were reading. The reader also could adjust their text size, order books into categories, and translate passages into different languages. Overall, the Kindle was an e-reader that incorporated many different features to enable books to transfer over to the digital

world ('Kindle,' 1996-2015).

In addition, Plastic Logic e-reader, called "Dossier" in development, was optimized for business use. The device supported Microsoft Office documents, such as Word and Excel. The display was 8.5" X 11". Dossier general release was planned for 2010. Finally, mobile devices that could display text such as smartphones and PDAs could also function as e-readers. Furthermore, most e-readers used e-Ink technology rather than a backlit screen such as a computer monitor. E-Ink was a technology that produced a screen that reflected the properties of actual paper and ink instead of a computer screen. E-Ink tried to achieve a level of text clarity and readability that was comparable to paper and regular ink (Barron, 2011).

7.   Comparison between E-books and Printed Books

Books had revolutionized the world hundreds of years ago. No matter how common they seemed today, they did represent an innovation. However, with the new e-book trend around, all these benefits tended to pale in front of what e-books could do. E-books differed from printed books in many areas, Buckley and Johnson (2013) mentioned that "more students and faculty [are] using portable electronic devices, and e-book data bases now provide more downloading capabilities". It meant that more students were using electronic devices in study, for example, in taking notes rather than handwriting materials. However, students still preferred print versions of textbooks.

In addition to that, Zambarbieri and Carniglia (2012) noted that e-books had many advantages over p-books. This competition between e-books and printed books had largely been discussed by many experts on how readers could get quality knowledge and information by using intensively screen reading devices rather than printed books. Thus, when analyzing e-books and p-books and the differences between them, anyone could come up with many ideas to make a comparison between them. Most printed books and e-books used similar conventions, such as a cover page, title page, copyright page, table of contents, chapters, and

paragraphs.

However, there were some remarkable differences between printed books and e-books. First, the price of e-books was pretty less and cheap compared to printed ones. This low cost was because of the publishing of e-books which did not require only computing devices that were cheap to acquire and utilize. E-book authors and publishers only needed computer hardware and software to come up with very productive and marketable content for various reader audiences. Along with that, thousands of free e-books were available on the Internet to download.

On the other hand, the cost of printed books was more expensive than their electronic counterparts, in form of hand-held materials. These tools were expensive to acquire and maintain and this was the cause why countries did not have publishing and press houses everywhere (Chowdary, 2016).

Second, E-books had a long life in comparison to print books. As long as the electronic device would exist, the e-book would be. In addition, an e-book could be backed up and stored in any device. They were also renewable since readers could correct mistakes and alter the content by adding or omitting information. In contrast, p-books were subject to a lot of damages such as: variations in temperature, moisture, falling, tearing, and even gnawing from pets. The life of a p-book also depended on the quality of the paper used in printing its pages; if the papers were of low quality, they tended to get dumpy, and words started becoming blurred over an extended period of time (Chowdary, 2016).

Third, e-book formatting and print book formatting were very different from each other. Trying to make an e-book format was the same as the format of its print book version that would only frustrate rather than helped a publisher and an author. Furthermore, tabs, columns, symbols, paragraph returns, colored fonts, and spacebars were not used when formatting an e-book. Unlike e-books, p-books had a fixed layout that could be controlled, and did not

change after printing since they supported the various components mentioned above such as paragraph returns. Page numbers were, therefore, irrelevant in E-books compared to print books since E-books were readable on different supporting devices (Chowdary, 2016).

Fourth, contrary to p-books, e-books were highly portable. E-book readers (or computers with e-book software) could carry dozens to hundreds of e-books in which a person could check his entire e-book library on his device. P-books, on the other hand, were bulky, took space and could be quite heavy to carry several books at a time, especially for students carrying textbooks in backpacks or book bags. Furthermore, when it came to interactivity, p-books had it. Readers could interact with the presented content in almost all their senses. Holding a book in hand, the smell of the paper, nice binding and flipping through pages was a beautiful feeling which was lacked in a digital device (Chowdary, 2016).

To sum up, while everything around us was getting the switch to the digital, the question of e-books versus printed books was in constant debate. Sometimes it became difficult to decide between e-books and printed books. Each part supported benefits and never mentioned the drawbacks. The truth was both e-books and printed books had advantages as well as disadvantages.

8.   The Effect of E-books on Reading Comprehension

Technology had rapidly grown over the past few decades and educators increased their interest in e-books as an alternative to traditional books. According to Jones and Brown " The movement toward reading on personal devices had been on the rise since Amazon Kindle was introduced in 2007, followed by devices marketed by Barnes and Noble, Apple, and Sony (2011)". Those electronic books were books that students could use to read on desktop computers, laptops, or hand-held reading devices such as Kindle, IPad, Nook, Papyrus, Kobo, Pocket Book pro 602…etc. They offered readers print and illustrations much like traditional books. However, e-books attracted readers by offering multimodal characteristics that p-

books did not offer. For example, features such as narration, word pronunciation, animations and sound effects, which supported the text, could aide in reducing the effort of decoding individual words and assisted a student in focusing on comprehension of the text (Lewin, 2000; Matthew, 1997; Miller, Blackstock & Miller, 1994). That was to say that many e-books came with video and audio links, as well as interactive tools at the touch of a finger, which grabbed the reader's attention to the text and helped him to understand better.

Moreover, in addition to supporting students in developing word reading skills, a number of studies examined the effects of electronic books on students' reading comprehension (Seyit, 2010; Pearman, 2008; Grimshaw et al., 2007; Verhallen et al., 2006; Doty et al., 2001; Matthew, 1996). This latter (Comprehension) was defined by the National Reading Panel (2000) as a complex and cognitive process that required an intentional and thoughtful interaction between the reader and the text to make meaning. Comprehension was essential to reading because if the readers did not understand the message of the text, they were not learning anything, just repeating the text and imitating sounds of a language (Seyit, 2010). In other words, comprehension was important to the reader to comprehend the written message.

Additionally, Larson's research (2009) supported electronic texts as a means to foster literacy development and, in particular, reading comprehension. He stated that " digital reading devices put the reader in greater control of the text, promoting new literacy practices that strengthen comprehension and enhance the reader's connectedness to the text" (2010, p. 15).

Furthermore, through reading electronic books students have scored higher on comprehension tests when compared to traditional print texts (Korat, 2010; Grimshaw et al., 2007, Doty et al., 2001). This meant that e-books fostered higher levels of interaction between the reader and the text than p-books. In addition to that, through the studies mentioned before,

it had been shown that students' comprehension became better because when they were using electronic books, they had to make less energy and efforts on decoding, and had access to more comprehension, context cues, and supportive note taking features.

First, eliminating the need for students to focus on decoding and fluency was the first way that electronic books offered to improve students' comprehension. Doty et al. stated that "through narration, illustration, and some animations, these electronic talking books can support reading comprehension measured by comprehension questions" (2001, p. 374). In other words, text-to-speech narration enabled students to pay attention to building meaning from the text rather than making efforts on word solving. This supportive feature allowed students to read and understand difficult texts at higher reading levels than they would be able to using traditional print books.

Second, another way that electronic books aided students in comprehending text was that they offered a greater repertoire of comprehension cues than printed texts (Pearman & Lefever-Davis, 2006). This meant that context cues were another way that e-books offered to help students understand more. Moreover, electronic books integrated multiple senses through sound effects, tactile features and visual animations that dramatized word and story meanings to reinforce concepts and vocabulary and gave the story multiple layers of meanings (de Jong and Bus, 2002). That was to say that music, sounds, visual animations and tactile characteristics provided a cue, or a context that students needed to focus their attention on the story to find out what happened. Also, students were encouraged by the digital characteristics in e-books to use comprehension strategies such as making predictions, making connections and inferences and visualizing the story to improve their comprehension of the text. Animations and pictures provided a rich, eye-catching setting, which helped students visualize where and when the story took place, and assisted them in building or activating more complete schemas of stories (Bus, de Jong & Verhallen, 2006).

Third, student's reading comprehension was also affected by the summarizing or note taking features of electronic books which gave children a chance to synthesize information and respond to texts in their own way while reading (Zucker et al., 2009). In other words, in hand-held reading devices such as the Kindle or Nook, students could make personal annotations in the text, much like writing in the margins of a paper book, and saved them to refer to later. Larson (2010) observed two students using a Kindle to take notes as they read and found that they put into practice comprehension strategies such as questioning, connecting, retelling, answering questions, in the text, and evaluating through their notes. They were capable to underline and highlight necessary ideas to aide them summarize the story later, increasing their story understanding.

To sum up, many electronic books were created with these features which could provide supports for readers that printed books could not and helped them to improve their reading comprehension.

Conclusion

The area of educational technology was quickly developing, and technology was becoming readily obtainable and approachable to educators and administrators. This technology was the ultimate tool that enabled students to remain in constant communication with the world. Furthermore, this phenomenon had now moved into the classroom and teachers were using it to enhance students skills including reading comprehension. One of these technological devices were the E-books which had taken a long time to develop, but now they were appearing as a controlling and essential format in libraries' collections and becoming the tipping point for the electronic format, in general. Moreover, while there was a long history of p-books being used by people in publishing industry, it's obvious that things were changing rapidly, as there were increasing numbers of facts that explained the recent financial feasibility of e-books.

CHAPTER THREE

Data Collection, Analysis and Interpretation of the Experiment

I. Description of the Experimental Study

Introduction

This chapter was devoted to describe the practical part. It covered the research design and methodology applied to achieve the aims of the study, answer the research questions of this investigation, and to confirm or reject the hypotheses of this investigation. It also described how data was collected for conducting this study and the tools that were used to check the effect of reading electronic books on reading comprehension. Thus, an experiment was designed to second year EFL students, at the department of English, in Mila University Centre, in addition to a structured interview that was conducted with some teachers of English language, at the same department. The collected data and the obtained results would enable to diagnose the effects of using electronic books and how they were useful and could help students to achieve better reading comprehension.

In addition to that, a description, analysis and discussion of the gathered information and the main findings from both the experiment and the interview were provided in the practical part. Finally, it highlighted some recommendations and pedagogical implications that were stated at the end of the field investigation.

1. Means of Data Collection

The nature of this quest dictated the experiment as the best choice for the primary tool of data collection. The secondary tool utilized, in this investigation, was a qualitative one, in the form of an interview designed to answer the second and third research questions. Both tools served for confirming one of the hypotheses and rejecting the other.

2. Aims of the Experiment

As it was pointed out in the introduction, the aim behind this experiment was to improve the students' reading comprehension by allowing them the opportunity to read electronic books. Since reading was marginalized and integrated with written expression, two

groups of second year students, at the English Department of Mila University, were chosen to be the sample population in the experimental study. The groups were allocated randomly, one to the experimental group, and the other to the control group. The control group would receive a traditional instruction (reading printed books); however, the experimental group would be taught reading through electronic books, in the course of written expression.

3. Population and Sample of the Experiment

3.1. The Students

This experimental study was conducted at Abdelhafid Boussouf University Center on a sample of the population of 2nd year students of English. Out of the six groups of 2nd year students, two groups were randomly chosen to participate. One of the groups, comprised of 30 students, was haphazardly assigned as the experimental group (EG). The second group, comprised of 30 students, was assigned to be the control group (CG). The majority of the participants were females, their age range was between 20 and 24; and they had all studied English as a Foreign Language for at least 8 years: 4 years at middle school, 3 years at secondary school, and 1 year at university. The reason second year students were chosen, for this research, was because unlike first year students, they were more comfortable using the language and more familiar with taking the stage and speaking to their peers as part of the student-centered approach.

4. The Test

A reading comprehension test was the major instrument utilized in this study. It consisted of a text, comprising two paragraphs, followed by five multiple choice questions testing reading comprehension (see appendix 1 for the full test). This test was chosen from a collection of TOEFL reading comprehension tests available online. The TOEFL tests are used for speakers of ESL/EFL who wish to study in the United States and Canada. TOEFL tests have high reliability and generalizability (Pierce, 1994, as cited in Alsamadani, 2009). The

text of the test that was opted for was of an informative nature; speaking about *Philosophy in the Second Half of the 19th Century*. The five questions that followed were scored four points for each correct answer, resulting in a perfect score of 20 for 5 correct answers.

5. The Control Group (Instruction for the Control Group)

After the pre-test was taken, the control group was instructed to group themselves and read the same novels assigned to the experimental group. All students could read the novels inside or outside the classroom, or even at home. The time allocation for this task was six weeks for reading. When all the students finished reading the novels, they brought the summaries to their teacher to be discussed in groups, corrected, and scored. By the end of the collective discussion and evaluation, they were post-tested using the same reading comprehension test as the pre-test.

6. The Treatment

6.1. The Experimental Group (Instruction for the Experimental Group)

The experiment was carried out by pre-testing the groups in the first session. Then, students were grouped into 10 groups of three members. Students of the experimental group were assigned to read different electronic novels chosen by the researchers; however, students of the control group were given the same novels that were printed (Both groups could read the novels at any place they want). Their reading took a period of six weeks, then, they were asked to prepare a summary about the novels (the electronic novels for the experimental group, and the printed version for the control group), to be checked by the other students, of the same group, for evaluation, and to be scored by the teacher as part of the continuous assessment.

Then, as a part of the treatment, the teacher of the experimental group opened a discussion about the advantages and disadvantages of e-books, the reason behind that

conversation was to convince the participants read electronically. The learners provided the following list:

A) Advantages

1. E-books are small in size, and easily stored and exchanged.

2. E-books are light versions that hold information.

3. E-books possess specific annotations like note taking, dictionaries, and highlighting.

4. E-books are not kept as they are; they are changed to meet learners' needs through size, text display and print.

5. E-books are provided by video or audio connections and other interactive tools; that's why readers are engaged.

6. Learners of the 21st century are born in a technological world, hence the use e-books becomes a necessity.

7. E-books help learners improve their vocabulary through selecting words, phrases and definitions to be explained with a touch of finger.

B) Disadvantages

1. E-books require an electronic device to be read.

2. They require an electric power to function.

3. Electronic transformation did not cover all the existing books.

Students were also asked to choose one of the following applications to scaffold their electronic reading:

1) An application that was available on was called Sony Readers; according to Larson (2010), this application:

a) helps learners to create their own profiles,

b) facilitates accessing their reading level, their period of reading, rewards they got , and searching for writers and titles,

c) affords them the chance to benefit from many features like the read aloud, the built in dictionary, and the tracker feature.

2) Participants were also allowed to use another application which was called Amazon Kindle. Seyit (2010) believed that it helped users to:

a) practice comprehension strategies as: questioning, connecting, answering questions, using notes, evaluating and retelling the story.

b) underline, highlight the main ideas, and to summarize the story later.

c) increase their understanding of the theme, the plot, characters, and the end of the story, through the retelling strategy.

3) An other option that was given to the students was interactive CD-ROMs, they were selected to support learners' comprehension. They help them review information, and check their comprehension through quizzes (Oakley & Jay, 2008).

Once the six weeks were over, as part of the treatment, evaluating the summaries took another period of six weeks, which meant three months as a total period. By the end of the twelve week period, each group received the post-test using the same testing.

Conclusion

As indicated in this introductory section, reading was taught in combination with writing for both groups. However, the experimental group was exposed to electronic books, to see whether teaching them would influence their reading comprehension or not. Through a series of screen reading materials, as a treatment, and printed books as a traditional way of instruction, students, in both groups, were assigned to read the same novels. Of course, time and syllabus constraints stood as an obstacle to make this investigation richer.

II. Data Analysis and Interpretation of the Experimental Results

Introduction

This experimental study focused on the use of electronic books by foreign language learners in their reading. It was conducted at Abdelhafid Boussouf University Center on a sample of the population of 2nd year students of English. It investigated mainly the effect of this type of books on students' proficiency in comprehending written texts. Here is the analysis and interpretation of the data driven from the pre-test and the post-test.

1. Results of the Quasi-experimental Study

1.1. Analysis of the Results of the Pre-test

1.1.1. The Experimental Group

The analysis of the results of the pre-test for the experimental group showed that the students were not able to find correct answers for Q4 and Q5. Table 1 showed that only 68 out of 150 (45.33%) answers were correct for the experimental group, and 82 out of 150 (54.66%) answers were incorrect. Therefore, incorrect answers were prevalent.

Questions	Correct Answers	Percentage	Incorrect answers	Percentage
Q1	30	100	00	00
Q2	24	80	06	20
Q3	14	46.66	16	53.34
Q4	00	00	30	100
Q5	00	00	30	100
Total	68	45.33	82	54.66

Table 1: The Experimental Group's Correct and Incorrect Answers in the Pre-test.
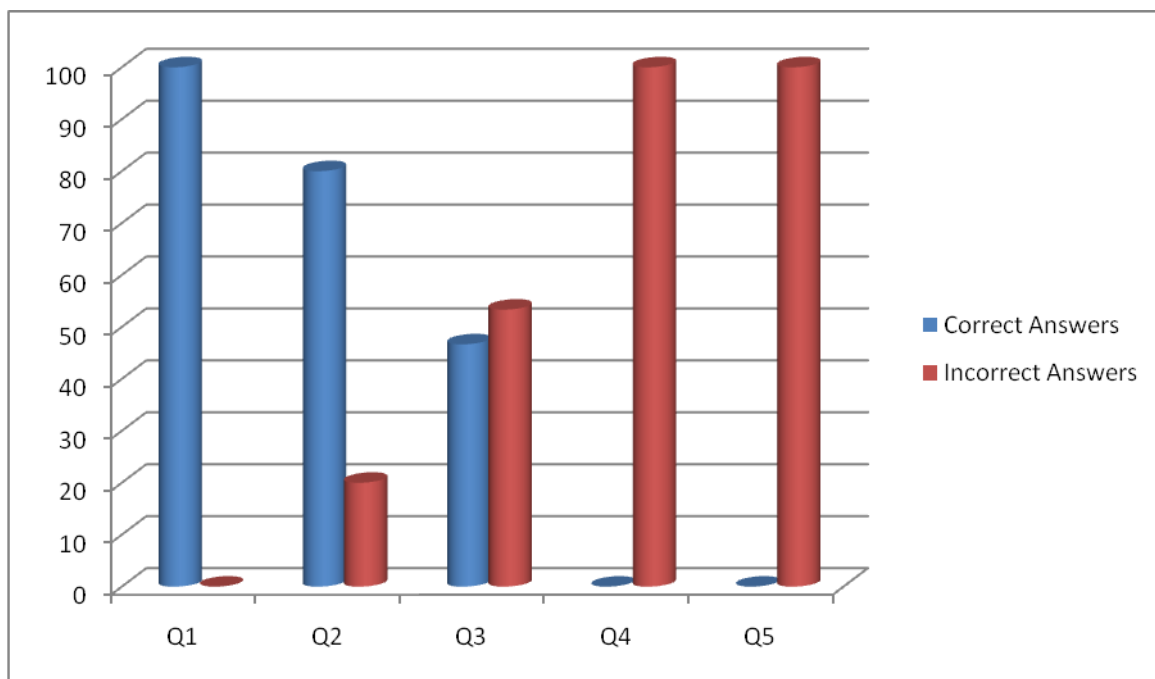
Figure 1: The Experimental Group's Correct and Incorrect Answers in the Pre-test.

According to table 1, 100% of the students provided correct answers for the first question. This might be attributed to the fact that all of the students were capable to know what the passage was primarily about.

The majority of the students (80%), or twenty four students, opted for the correct answer for question number two. This implied that they understood what they read since they could choose what was true and what was not from the text.

In addition to that, only fourteen students (64.66%) chose the correct answer for question three. This implied that they were somehow able to deduce the meaning of the phrase from their surrounded context, to come to their exact meaning within the text.

However, none of the students was successful in answering questions number four and five. The students' inability to answer question 4 was most likely due to the fact that the options given were actually very close in meaning and all of them were already mentioned in the text. Thus, students might mix between the options and they could not know where

pragmatism was more popular. Besides, failure to answer question 5 was most likely because they had some difficulties inferring phrase meaning from the context of the text.

1.1.2. The Control Group

The results of the control group in the pre-test showed that the students were not able to provide correct answers for questions four and five. Table 2 revealed that 61 out of 150 (40.66%) answers were correct, and 89 answers out of 150 (59.33%) were incorrect for the control group.

Questions	Correct Answers	Percentage	Incorrect Answers	Percentage
Q1	30	100	00	00
Q2	22	73.33	08	26.66
Q3	09	30	21	70
Q4	00	00	30	100
Q5	00	00	30	100
Total	61	40.66	89	59.33

**Table 2: The Control Group's Correct and Incorrect Answers in the Pre-test.**
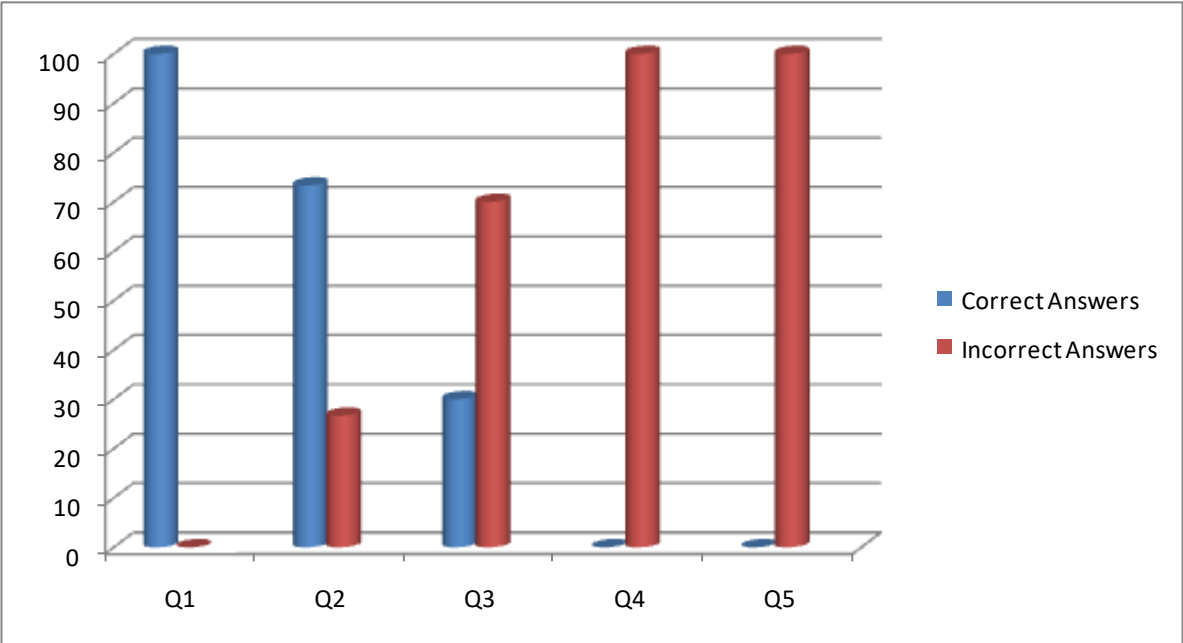
Figure 2: The Control Group's Correct and Incorrect Answers in the Pre-test.

Table 2 displayed that all the students (100%) answered correctly the first question. This result could be interpreted that all the students could know what the passage was about.

In addition to that, twenty two students (73.33%) answered correctly question two. Question two had to do with which one of the options was true or false and this percentage of correct answers suggested that students had no difficulty in choosing the correct answer.

Also, the table showed that only 9 students (30%) were able to realize the right answer for Q3 while the majority (70%) could not do so. This percentage of correct answers indicated that reference was somehow an issue for the students and they were not able to deduce the referenced phrase.

Finally, there were (00%) of the students who opted for correct answers, for questions four and five. The percentage for the last two questions indicated a severe lack in the students' abilities to infer the implied meanings of the text, i.e., they could read the lines but they have difficulty reading between and beyond the lines. This was attributed to the robust effect of unfamiliarity with the topic stood as an obstacle to grasp the right meaning.

1.1.3. Control Group versus Experimental Group Scores in the Pre-test

Table 13 displayed that there is no significant difference between the experimental group ($\overline{x_e}$=9.75), and the control group ($\overline{x_c}$=9.68) in the pre-test scores. This orientated to say that the participants were approximately of the same level as it gave the impression that students either did not like reading, or they read but they did not understand. The mean of the two groups before the experimentation revealed that the sample of the present study was almost homogenous, with a mean difference of $\overline{d} = 0.07$.

The table also showed that the two groups have a problem in reading comprehension since the two means were under the average.

Students	Experimental Group's Pre-test Scores	Control Group's Pre-test Scores
01	12	09
02	10	07
03	11.5	4.5
04	10	11
05	09	8.5
06	6.5	13.5
07	07	15.5
08	12	9.5
09	11.5	12.5
10	13.5	12
11	9.5	8.5
12	15	7.5
13	09	7.5
14	11.5	8
15	09	11.5
16	10.5	15
17	13.5	12
18	12.5	10
19	7.5	15.5
20	08	7.5
21	6.5	12
22	11	12.5
23	14.5	5
24	13	6
25	09	8.5
26	8.5	10.5
27	09	12
28	6.5	9.5
29	7	5
30	11	9
Means	$\bar{x}_e = 9.75$	$\bar{x}_c = 9.68$

Table 3: Control and Experimental Groups' pre-test Scores

From the table 3 above, the frequency of the 60 scores was summarized as follows.

a. Experimental Group

$16 \geq 10 \qquad \rightarrow \qquad 53.33 \quad \% \geq 10$

$14 < 10 \qquad \rightarrow \qquad 46.66 \% < 10$

b. Control Group

$14 \geq 10 \qquad \rightarrow \qquad 46.66 \quad \% \geq 10$

$16 < 10 \qquad \rightarrow \qquad 53.33 \quad \% < 10$

2. Analysis of the Results of the Post-test in Comparison to the Pre-test

Table 4 showed the following results for control group's pre-test versus post-test scores.

Scores	Experimental Group		Control Group	
	Pre-test Frequency	Post-test Frequency	Pre-test Frequency	Post-test Frequency
00-3.5	00	00	00	00
04-7.5	06	00	08	06
08-11.5	16	05	11	15
12-15.5	08	19	11	08
16-19.5	00	06	00	01
20	00	00	00	00

Table 4: Frequency of the Experimental and Control Group Scores in Reading

Comprehension

From the table 4 above, the frequency of the 60 scores for the posttest were summarized as follows:

a. Experimental Group

$29 \geq 10 \qquad \rightarrow \qquad 96.66 \quad \% \geq 10$

$1 < 10 \qquad \rightarrow \qquad 3.33 \quad \% < 10$

b. Control Group

$19 \geq 10 \qquad \rightarrow \qquad 63.33 \quad \% \geq 10$

$11 < 10 \qquad \rightarrow \qquad 36.66 \% < 10$

Comparing results from tables 4 and 5, helped to notice that there was no difference between the post-test and the pre-test scores for the control group. Table 4 showed that sixteen students improved their reading comprehension, after reading the novels from printed books. On the other hand, 14 students did not display any amelioration in their reading comprehension. Out of the 14 students, 2 students retained the same scores and 12 students showed less performance. In other words, it is clear that these students were not able to increase their reading comprehension as they read from traditional books.

Moreover, it was noticed that the control group recorded a pre-test mean of $\overline{x}$= 09.86 and a post-test mean of $\overline{x}$ = 09.97. Computing the difference between the two means resulted in $\overline{d}$ = 0.11 which was not a significant one. This implied that students of the control group kept the same level. The following table clarified the detailed results.

Students	Pre-test	Post-test	Diffrence
01	09	12.5	3.5
02	07	07	00
03	4.5	6.5	2
04	11	11	00
05	8.5	10	1.5
06	13.5	12.5	-1
07	15.5	7.5	-7.5
08	9.5	12	2.5
09	12.5	9.5	-3
10	12	9	-3
11	8.5	11.5	3
12	7.5	10.5	3
13	7.5	12	4.5
14	8	9	1
15	11.5	9	-2.5
16	15	10.5	-4.5
17	12	11	-1
18	10	12.5	2.5
19	15.5	12.5	-3
20	7.5	9.5	2
21	12	16	4
22	12.5	7.5	-5

23	5	10.5	5.5
24	6	13	7
25	8.5	7	-1.5
26	10.5	4.5	-5.5
27	12	10	-2
28	9.5	12.5	3
29	5	10.5	4.5
30	9	11.5	2.5
Means	$\bar{x}_c$ =9.68	$\bar{x}_c$ =9.97	$\bar{d}$= 0.11

Table 5: Control Group's Pre-test, Post-test, and Differences in Reading Comprehension
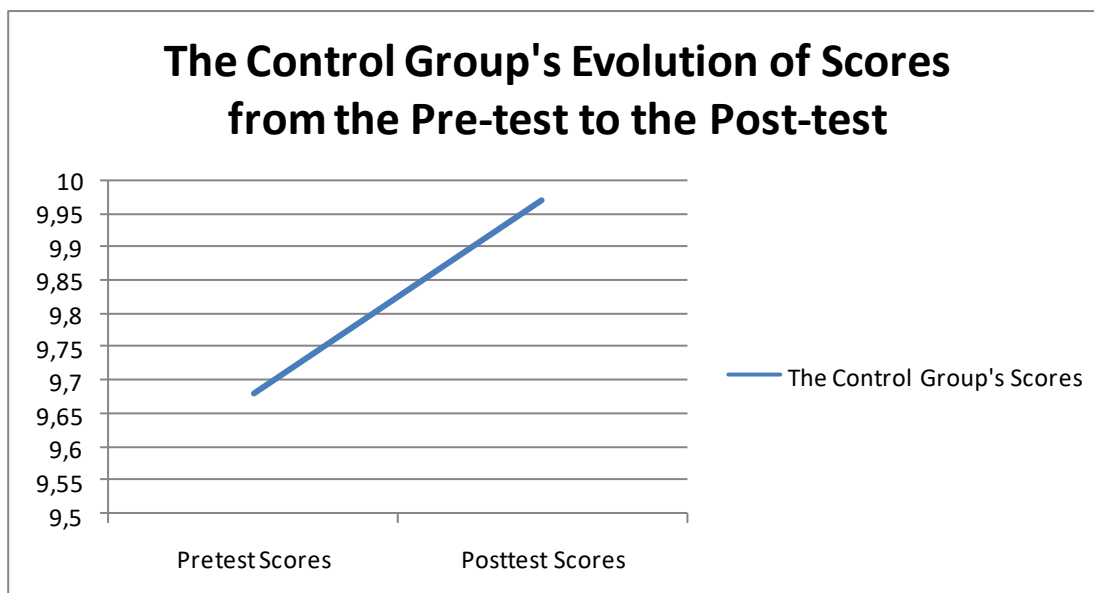
Scores.

Figure 3: The Evolution of Reading Comprehension Scores of the Control Group

2.1. Experimental Group Pre-test versus Post-test Scores in Reading Comprehension

Table 6 showed the following results:

Students	Pre-test	Post-test	Difference
01	12	14.5	2.5
02	10	13	3
03	11.5	15.5	4
04	10	12	2

05	09	13	4
06	6.5	10	3.5
07	07	11	4
08	12	12.5	0.5
09	11.5	16.5	5
10	13.5	16.5	3
11	9.5	15	5.5
12	15	16.5	1.5
13	09	15	6
14	11.5	16.5	5
15	09	13.5	4.5
16	10.5	14.5	4
17	13.5	17.5	4
18	12.5	14.5	2
19	7.5	12.5	5
20	08	14.5	6.5
21	6.5	11.5	5
22	11	15.5	4.5
23	14.5	18	3.5
24	13	15	2
25	09	14.5	5.5
26	8.5	14	6
27	09	12.5	3.5
28	6.5	9	2.5
29	7	11	4
30	11	14	3
Means	$\bar{x}_e$ =9.75	$\bar{x}_e$ =13.87	$\bar{d}$ = 04.12

Table 6: The Experimental Group's Pre-test, Post-test, and Differences in Reading Comprehension Scores

It was noticed that 17 students gained the average in the pre-test. However, 29 students (96.66%) obtained the average in the post-test. In addition, the post-test mean ($\bar{x}$ = 13.87) was greater than the pre-test mean ($\bar{x}$ = 09.75). Consequently, the mean difference was significant ($\bar{d}$ = 4.12). This alluded that the experimental group had performed better due to the treatment.

The Experimental Group's Evolution of Scores from the Pre-test to the Post-test
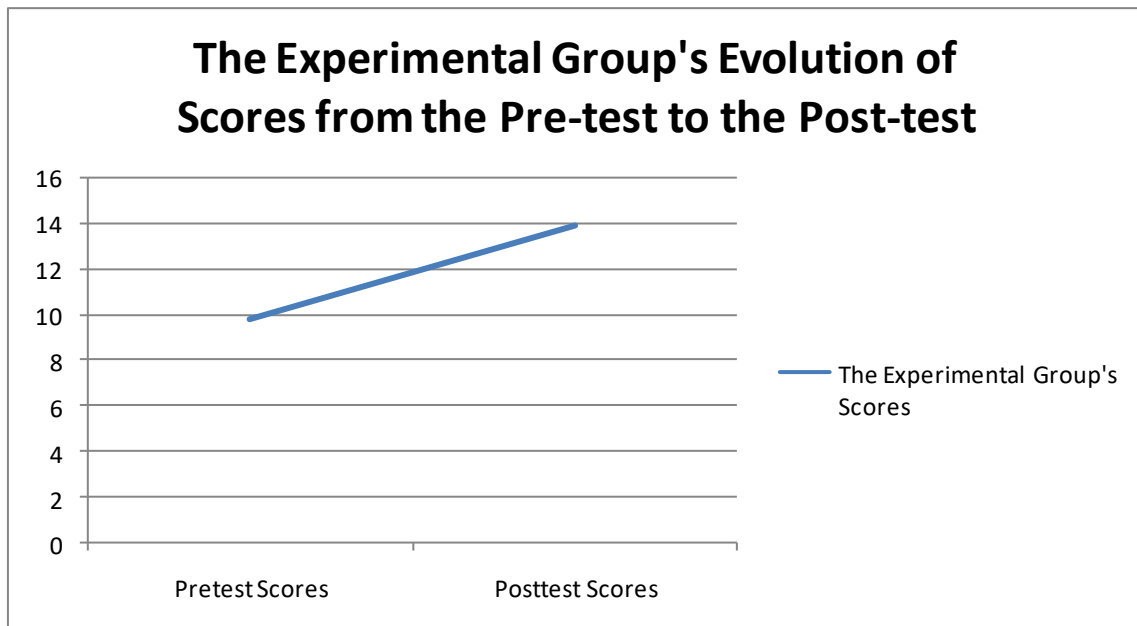
Figure 4: The Evolution of Reading Comprehension Scores of the Experimental Group

3. The Statistical Tools

3.1. The Paired-Samples t-test

3.1.1. Definition

The paired-sample t-test, sometimes called the dependent sample *t*-test, has been seen as a statistical tool and a parametric test used to determine whether the mean difference between two sets of observations is zero. In a paired sample *t*-test, each subject or entity is measured twice, resulting in *pairs* of observations. Common applications of the paired sample *t*-test include case-control studies or repeated-measures designs. In other words, the paired sample t Test compares two means that are from the same individual, object, or related

The two means could represent things like:

- A measurement taken at two different times (e.g., pre-test and post-test with an intervention administered between the two points).

- A measurement taken under two different conditions (e.g., completing a test under a "control" condition and an "experimental" condition).

- Measurement taken from two halves or sides of a subject or experimental unit (e.g., measuring hearing loss in a subject's left and right ears). (Mackey, 2005)

Thus, in here, it is used to test the effect of the treatment (E-books) on the dependent variable (reading comprehension).

3.1.2. Computation of the t value

The results for computing the t value were grouped in table 7.

Difference (d)	Square Difference	The Mean Difference	The Standard Deviation of the Difference	T-Value
115	502	$\bar{d}$= 4.12	S_d=7.54	T29=15.18

Table 7: Summary of the Values Required for Counting the t-value

For the sake of proving whether the noticed progress in students' reading comprehension was due to reading E-books or due to chance, the observed t-value and the critical t-value were compared. The t-value (15.18) exceeded the tabulated t-value (2.82). Therefore, the observed t-value was statistically significant.

Consequently, it could be said that the students of the experimental group achieved better results in the post-test due to relying on E-books and not to chance.

3.1.3. Comparing Results of the Experimental and Control Groups

Table 5 and 6 revealed that the post-test mean of the experimental group was larger than the post-test mean of the control group ($\bar{x}_e$= 13.87 > $\bar{x}_c$= 9.97).

This proved that the experimental group outperformed the control group. To test the validity of the null hypothesis (H0) which suggested that there would be no significant difference in reading comprehension between students whose reading was followed by E-books and those whose reading was not followed by them.

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3.2. The Independent Samples t-test

3.2.1. Definition

The independent t-test, also called the two sample t-test, independent-samples t-test, the unpaired samples t-test or student's t-test, has been considered as an inferential statistical and parametric test that has determined whether there has been a statistically significant difference between the means in two unrelated groups. For example, you can run a t test to see if the average test scores of males and females are different; the test answers the question, "Could these differences have occurred by random chance?" Thus, in here, it has been used to compare the results of the experimental and the control groups on the post-test scores (Stephanie Glen, 2015).

3.2.2. Calculating the Independent Samples t-test

The t-value was calculated through the independent sample t-test, on the basis of the following results, which were summarized in tables 7 and 8.

Students	Experimental Group's Scores x_e	Square Scores x^2_e	Control Group's Scores x_c	Square Scores x^2_c
01	14.5	210.25	12.5	156.25
02	13	169	07	49
03	15.5	240.25	6.5	42.25
04	12	144	11	121
05	13	169	10	100
06	10	100	12.5	156.25
07	11	121	7.5	56.25
08	12.5	156.25	12	144
09	16.5	272.25	9.5	90.25
10	16.5	272.25	9	81
11	15	225	11.5	132.25
12	16.5	272.25	10.5	110.25
13	15	225	12	144
14	16.5	272.25	9	81
15	13.5	182.25	9	81

16	14.5	210.25	10.5	110.25
17	17.5	306.25	11	121
18	14.5	210.25	12.5	156.25
19	12.5	156.25	12.5	156.25
20	14.5	210.25	9.5	90.25
21	11.5	132.25	16	256
22	15.5	240.25	7.5	56.25
23	18	324	10.5	110.25
24	15	225	13	169
25	14.5	210.25	7	49
26	14	196	4.5	20.25
27	12.5	156.25	10	100
28	9	81	12.5	156.25
29	11	121	10.5	110.25
30	14	196	11.5	132.25
	Σx_e=419.5	$\Sigma x^2{}_e$=4599	Σx_c=308.49	$\Sigma x^2{}_c$=2422

Table 8: The Experimental and Control Group's Post-test Square Scores.

The t-value can be computed as follows:

$$t_{N1+N2-2}=\frac{(\bar{x}_1-\bar{x}_2)\sqrt{(N_1+N_2-2)N_1 N_2}}{\sqrt{(N_1 S^2{}_1+N_2 S^2{}_2)(N_1+N_2)}}$$

T58= 6.44

$\bar{x}_1$= Mean of the first group

$\bar{x}_2$ = Mean of the second group

N_1 = Number of the participants in the first group

N_2 = Number of the participants in the second group

S_1 = Standard Deviation (Sample Variance) of the first group

S_2 = Standard Deviation (Sample Variance) of the second group

On the basis of the mean of the experimental group ($\bar{x}_c$= 13.87) and the mean of the control group ($\bar{x}_c$= 09.97), the difference in mean was considerable and equaled ($\bar{d}$ = 03.90). As a result, the experimental group demonstrated a significant improvement in their reading

comprehension. These results could be confirmed by the t-value (6.44), which was extremely greater than the critical t-value (2.70).

Consequently, the alternative hypothesis was confirmed and the null hypothesis was rejected. The satisfactory improvement in the post-test scores of the experimental group was not due to chance, but was the result of reading E-books.

Conclusion

In this study, students did not read proficiently, i.e., they had a reading comprehension problem because they were not allowed to opt for their preferable reading instruments. For this purpose, the above experiment was conducted to check the possibility of increasing learners' understanding of the written language. Statistical analysis indicated that a significant positive effect resulted from students' exposure to electronic reading materials. By counting the t-value, through testing and post testing the two groups, it was proved that e-books made a pertinent difference within the experimental group, and between the two groups, and hence, the hypothesis was confirmed. Consequently, it was advocated that electronic reading should be included in the writing classes, at the university, so that reading comprehension could be increased.

CHAPTER FOUR

Data Collection Reinforcement, Analysis, Interpretation of the Results, and Pedagogical Implications

I.   The Results of the Teacher's Interview

Introduction

The interview was an important data collecting technique, which involved verbal communication between both the researcher and the subject. It was used to examine the interviewee's knowledge, skills, abilities and attitudes. The present teachers' interview aimed at collecting some data concerning the role of reading e-books in improving learners' reading comprehension, and to investigate to what extent teachers supported their learners to read e-books to develop their reading understanding.

1.   Description of the Teachers' Interview

In this current investigation, the interview was the second tool for gathering data. The interview was conducted with four teachers, currently practicing teaching in the English department, at Abdelhafid Boussouf University Center. It consisted of fourteen (14) items, divided into three sections and arranged in order to make it clear and more beneficial for both researchers and teachers. The first section was 'General Questions' or background information, the second section was 'Reading Comprehension' and the last section was about 'E-books Importance'. The teachers' answers were received and analyzed in this section.

Concerning the first section, 'General Questions', it was like teachers' profile. It contained three personal questions, the first question (Q1) sought to investigate the teachers' qualifications, the second question (Q2) intended to know their years of experience, while the third question (Q3) dealt with the modules they were teaching.

The second section of the interview, 'Reading Comprehension', consisted of seven questions. The first question of this part (Q4) was about what teachers thought of the importance of reading for EFL learners. The second question (Q5) aimed to investigate whether the teachers were noticing the neglect of the reading skill by the Ministry of Higher Education. The next question (Q6) dealt with what teachers thought was the reason behind

students' reading. The fourth question (Q7) aimed at discovering the difficulties teachers faced while teaching the reading skill. While the fifth question (Q8) tried to find any solutions as suggestions to improve the EFL students' reading comprehension. The sixth question (Q9) attempted to know the techniques used when teaching reading comprehension. The last question (Q10) was about the role of new technologies which helped EFL readers.

The last section, 'E-books Importance', contained four items. The first item (Q11) sought to know the teachers opinion about printed and electronic resources. The second question (Q12) aimed to know whether e-books were more effective than printed ones in the teaching and learning process. The next question (Q13) tended to list the advantages of reading e-books. The last question (14) dealt with the reading strategies that helped in reading comprehension.

1.1. Population and Sample of the Interview

Four teachers of different modules, currently teaching in the English department, at Abdelhafid Boussouf University Center, were interviewed. The selection was based upon the availability of the teachers, as well as on their years of experience teaching EFL learners. Experienced teachers were opted for; this decision was made to ensure that they have been exposed to EFL learners enough to have valuable insight into their strengths and weaknesses.

2. Analysis of the Teachers' Interview

The first section consisted of the first three personal questions: teachers' qualifications, years of experience and the modules they were teaching. The first question revealed that two teachers were holders of a "Doctorate" degree, the third had a "Master" degree, while the fourth teacher was a holder of a "Magister" degree. The second question targeted the years of their experiences. Teacher (A) had 4 years of experience, teacher (B) had 12 years practicing teaching, teacher (C) had taught the English language for 2 years, and teacher (D) had taught for 5 years. The final question of this section was about the modules that they have taught up

to no.

Teacher (A) was a teacher of Written Expression, Oral Expression, and Cognitive Psychology, teacher (B) was responsible for teaching Oral Expression, Written Expression, and Methodology, teacher (C) taught Written expression and Grammar. Teacher (D) was a teacher of Oral Expression, Written Expression, Methodology of Research, and English for Specific Purposes.

The first analysis of the first section could be summarized in the table below:

Teachers	(A)	(B)	(C)	(D)
Qualifications	Doctorate	Master	Magister	Doctorate
Years of Experience	4 years	12 years	2 years	5 years
Modules	-Written Expression -Oral Expression -Cognitive Psychology	- Written Expression - Oral Expression -Methodology of research	-Written Expression - Grammar	-Written Expression -Oral Expression -Methodology of research -English for specific purposes

Table 9: The Teacher's Profile.

Furthermore, the second section of the interview consisted of seven questions and was about the importance, the neglect, and the purpose of reading. It was also about the difficulties that EFL students faced while reading, their suggestions for improving the current situation, the techniques that teachers used in class when teaching reading comprehension, and the role of new technologies for EFL readers.

Question 04: What can you say about the importance of reading for EFL learners?

When the four subjects were asked about the importance of reading for EFL learners, they all agreed that reading was of a high importance. According to teacher (A), reading was by far the most efficacious way of learning any language. She believed that it helped learners to become more comfortable with the words and the grammatical rules of the learned

language which enabled them to express their own ideas. Teacher (B) considered reading as one of the basic skills for EFL learners. She justified her point of view saying that it enriched students' dictionary with a variety of words and expressions that enabled them to continuously improve other aspects of their linguistic productivity. As far as style was concerned, it was undoubtedly that this skill polished learners' writing and speaking style at different levels. Learners can improve their thinking skill to detail facts and ideas critically and build a bridge between their background knowledge and the text at hand. While teacher (C) stated that reading helped learners build a better vocabulary, light up new ideas, and improve their English language. Teacher (D) said that the importance of reading can never be denied. Through reading, ESL learners did not just add to their target linguistic repertoire or their vocabulary stock, but they also developed their way of thinking. She believed that critical reading and critical thinking were related to a great extent. However, talking about the four basic skills, for her, reading contributed a lot to the other three skills especially writing.

Question 05: Do you think that reading as a skill is neglected in English teaching classes in comparison to other skills?

All four teachers agreed on the answer of this question claiming that the reading skill was not given enough attention .They agreed that the reading skill was neglected in English teaching classes, there was no module in the LMD system which taught reading with the strategies and techniques which made students read better. This ignorance of such skill might have an effect on the learning of the English language.

Question 06: In your opinion, do you think that your students read for academic purposes or pleasure?

Teacher (A) did not think that students would read only for pleasure, she stated that she honestly believed that they habitually read for academic purposes. While teacher B's opinion was that students read for both academic purposes and for pleasure, adding that students who

read independently; it meant for pleasure, became better readers, and had greater content knowledge than those who did not. Teacher (C) stated that students read for academic purposes and only when they were forced to. However, teacher (D) agreed with both teachers (A) and (C) that students only read for academic purposes claiming that students were unaware of the importance of reading.

Question 07: Which kind of difficulties do you have while teaching the reading skill?

This question took four different views. Teacher (A) believed that students generally enjoyed the activities with some difficulties in comprehension and vocabulary, some students got the general meaning of texts, but with the insufficient vocabulary they had, they faced many obstacles in reading and comprehending. For teacher (B), she claimed that there were many difficulties which were obstacles for EFL learners, the main difficulties lied in their lack of motivation, vocabulary, fluency, language and comprehension. While teacher (C) believed that students main problem was motivation. She stated that student's lack of interest or motivation was one of the biggest problems that students faced and believed that they needed specific reading encouragement. However, teacher (D) stated that the main difficulties that students faced while reading was because of their lack of motivation, vocabulary, comprehension, and topic genre.

Causes	(A)	(B)	(C)	(D)	Percentage
Lack of Motivation		X	X	X	75%
Lack of Vocabulary	X	X		X	75%
Lack of Fluency		X			25%
Lack of Comprehension	X	X		X	75%
Lack of Language		X			25%
Lack of Topic Genre				X	25%

Table 10: The Causes behind EFL Students' Reading Difficulties According to the Teachers.

Question 08: What do you suggest as solutions to overcome these difficulties and improve the EFL student's reading comprehension?

Teachers proposed some solutions that could be taken into account in order to develop students' reading comprehension. Teacher (A) believed that reading a lot was the best solution. She claimed that they needed to include the module of reading comprehension in order to raise the students' awareness of the importance of reading. Teacher (B) suggested many solutions : continuous self-motivation, excessive reading practice, improving and applying more effective reading techniques, avoiding unnecessary ideas while reading, opting for suitable contents for reading at certain levels, activating background knowledge while reading to develop critical thinking and eventually facilitating future reading practice, providing learners with much time to interchangeably lead interactive discussions after reading practice inside the classroom, in addition to that reading practice inside the classroom required teachers to approach a deep comprehension of the material, in the first place, so that they could stimulate learners' interaction with the text in hand. Teacher (C) agreed with teacher (A), the module of reading comprehension should be included in the LMD system; so that the students could read and learn better. She also claimed that reading should be given more attention as it was given to the other skills. For teacher (D), she stated that teachers needed to involve the students if they wanted them to be motivated. Perhaps, a good way to start was to ask them about their topics of interest before giving them assignments; another way was to group them according to their shared interests. In addition to that, making vivid presentations of the reading material rather than just dull reading assignments may be better. Positive feedbacks and awards also motivated the learners to read.

Question 09: What are the techniques that you use in the class when teaching reading

comprehension?

Both teachers (A) and (B) agreed that the techniques most used by them are identifying important events and concepts in the text, and asking students to summarize the general ideas. Teacher (A) believed that partnering students of different abilities from time to time so that a stronger reader can help a reader who might be struggling, was also a good technique. For teacher (B), she used another technique which was testing comprehension with questions, and she emphasized explaining with examples, motivating students to grasp the meaning of new words from the content instead of using the dictionary. While teacher (C) stated that she was using the target language all time in addition to asking learners to use dictionaries. For teacher (D) she had used three techniques that the three teachers used as well, she believed that asking learners to use dictionaries, identifying important events and concepts in the text, and testing comprehension with questions were the most effective techniques of teaching reading comprehension.

Techniques	(A)	(B)	(C)	(D)
Explaining in French, Arabic or Berber				
Using the target language all the time			X	
Asking learners to use dictionaries	X		X	X
Identifying important events and concepts in the text	X	X		X
Testing comprehension with questions		X		X
Giving students practice with new words				
Asking students to summarize	X	X		

the general idea	
Others	Explaining with examples, motivating students to grasp the meaning of new words from the content instead of using the dictionary.

Table 11: The Techniques Used in the EFL Class When Teaching Reading Comprehension according to the Teachers.

Question 10: What is the role of new technologies for EFL readers?

The four teachers were asked about the role of new technologies for EFL readers whether it was positive or negative. The first three teachers agreed that the role was both positive and negative. Teacher (A) said that the role of new technologies for readers could be positive as it could be negative, she believed that it depended on the way they used it. Furthermore, both teachers (B) and (C) said that the role of new technologies for readers was both positive and negative, those new technologies had two sides but they were more negative than positive. Teacher (D) disagreed with teachers (A), (B) and (C). She believed that the role was positive and stated that new technologies increased motivation and self esteem for EFL readers.

Section three was about the second chapter which dealt with "E-books". This section contained four questions asked for all the teachers.

Question 11: When your students have a home work to do, do you provide them with printed resources or electronic ones? Please justify the chosen answer.

Concerning this question, teacher (A) and (C) answer's was that they relied mostly on electronic resources. They believed that the electronic resources were easy to use and a lot quicker to search or extract information from, and most important it saved time and money.

However, teacher (B) and (D) answered that they provided them with both electronic and printed resources. For teacher (B), printed resources were better when the homework required her to provide extra explanation; so face to face communication, inside the classroom, served the need. Yet, electronic ones were more favorable when 100% of students ensured their availability of the tools. Teacher (D) stated that if the reading material can be easily printed, she gave the learners hard copies. However, if it was a whole book or a novel, for example, she just gave the titles with guidelines and some hints; in this case, the learners had to use electronic resources.

Resources	(A)	(B)	(C)	(D)
E-books	X		X	
Printed Books				
Both		X		X

Table 12: The Type of Resources Provided By Teachers to EFL Students When Having a Home Work.

Question 12: Are e-books more effective than printed ones in the teaching and learning process?

Teacher (A) strongly believed that e-books were not more effective than printed ones, she stated that printed books were more enjoyable for readers each time they read a book they invested their time and energy into that book, which created enjoyable memories. Teacher (B) and (C) claimed that it was not a matter of effectiveness; it was rather a matter of availability. Teacher (B) said that if both teachers and students had the available tools to interact with e-books, the result had undoubtedly a positive impact on the process. However, teacher (D) had a different opinion, she believed that e-books were more effective than printed ones because they saved the learner's both money and energy.

Question 13: According to you, what are the advantages of reading e-books?

The four respondents agreed that reading e-books was beneficial. Teacher (A) said that the advantages of e-books were not so different from those of printed ones; they had the same benefits, maybe the only difference was that printed books were easier on the eyes. Teacher (B) listed many advantages: e-books were accessible, the content was shareable, and they were designed with text- to speech- features that allowed readers to listen to the content in busy times. In addition, readers could easily check the simple explanation of complicated aspects in the content from other electronic resources. For teacher (C) and (D) they agreed on the same advantages of e-books, they believed that learners usually spent no money; they can download many books with just a single click; they also did not have to spend a long period looking for particular books in libraries, they can read the e-book anywhere, using PCs, tablets or smart phones so readers could save much time and money.

Question 14: In your view, what are the reading strategies that help the student comprehend what s/he reads quickly?

According to teacher (A) there were a set of strategies that helped the readers to read quickly. Firstly, they had always to highlight the purpose of their reading; Second, they had to skim what they were reading to see how the book, article, essay was organized and to get an idea of what was it about. Thirdly, they must scan through the text to find the piece of information that they wanted. More than that, they had to link the words and illustrations in the text with what they knew before; this will help them to think deeply about what they were reading. And of course taking notes and making short summaries which also helped a lot. Teacher (B), who also agreed in some points with teacher (A), said that the most important and helpful strategies were skimming and scanning as a first step. In addition to that, taking effective notes, engaging prior knowledge, questioning, summarizing, and explaining key words were very useful. However, teacher (C) believed that using dictionaries, jotting down the new words and using them in new sentences of their own were the best strategies to read

quickly. Teacher (D) said that the helpful reading strategies depended on the purpose of reading if it was reading for pleasure, there was no particular strategy, and learners were free to read the way they feel at ease. If it was reading for a particular purpose, it depended on this purpose: high levels of comprehension (to answer complex questions) needed slow reading with a lot of concentration. If it was reading to find particular information, learners should be relied on scanning strategies. If it was reading just for obtaining the general idea of the text, some skimming strategies might be called for use. She thought that these strategies can also be used with e-books. Perhaps it would be much easier, scanning an e-book on a digital screen.

3. Interpretation of the Results of the Interview

The second research instrument utilized in this investigation was an interview with teachers aimed at answering the second and third research questions. The general questions by which we opened the interview showed that the four interviewees were considerable experienced teachers. This means that the given input would be valuable and beneficial for our study.

The second section of the interview (questions 4 to 10) was about the importance, the ignorance, and the purpose of reading skill. In addition to that, it was about the reading difficulties among EFL learners, some suggested solutions to fix those problems, and the techniques used in class when teaching reading comprehension. Answers to question four indicated that there was a high awareness among EFL teachers about the importance of reading for EFL learners. In addition, from their answers to question five, it seemed that the teachers were in accord that the reading skill was not given its due attention in the English teaching classes by either the learners or the curriculum. It was not practical that such a skill was not given its own module while the three other skills were (listening, writing, and speaking), especially with the deficiencies that learners had and with their reluctance to

practice alone outside of the classroom. Furthermore, in question six, they agreed that they read mostly for academic purposes when they were forced and not for pleasure. There was a general agreement that students were ignorant to the value of such a skill and that they did not read enough either inside or outside of the classroom.

Question seven revealed that the four teachers were aware of the various problems and difficulties faced by EFL learners while reading. Their answers showed that there were not only one or two obstacles, but the sum of many barriers. The difficulties were in the student's lack of motivation, vocabulary, fluency, comprehension, language, and topic genre. Each teacher gave her point of view and those were the major problems faced by EFL learners. Concerning Question 8, it dealt with the teachers' suggestions for future improvements in which various solutions were listed by each teacher to overcome these difficulties and improve the EFL students' reading comprehension. First suggestion was to read a lot, and to include reading as a fundamental module in our university and the LMD system so that the students can read and learn better. The second one was to continuously self-motivate, practice reading excessively, improve and apply more effective reading techniques, provide learners with much time to interchangeably lead interactive discussions after reading practice inside the classroom, avoid unnecessary ideas while reading, opt for suitable contents for reading at certain levels, activate background knowledge while reading to develop critical thinking and eventually facilitate future reading practice, and practice reading inside the classroom that required teachers to approach a deep comprehension of the material in the first place so that they could stimulate learners' interaction with the text in hand. Another suggestion was to involve the students if the teachers wanted them to be motivated. Perhaps, a good way to start was to ask them about their topics of interest before giving them assignments; another way was to group them according to their shared interests. In addition to making vivid presentations of the reading material rather than just dull reading assignments may be better.

The last suggestion was about the importance of reading where it should be given more attention as it was given to the other skills.

Regarding question nine, all the teachers agreed on using various techniques in the class when teaching reading comprehension. Those techniques were: using the target language all the time, asking learners to use dictionaries, identifying important events and concepts in the text, testing comprehension with questions, and asking students to summarize the general idea. In addition to other techniques such as: explaining with examples and motivating students to grasp the meaning of new words from the content instead of using the dictionary. Question 10 revealed that the majority of teachers agreed that the role of new technologies for EFL readers was positive and negative. They said that it could be both depending on the way they used them.

The third section of our interview (questions 11 to 14) had to do with the use of e-books, its effectiveness, advantages, and the reading strategies that helped the learners to comprehend the text quickly. Answers to question 11 had indicated that each teacher had her own point of view. Nevertheless, two of them said that they provided their students with electronic resources when they had homework to do, whereas the third and the fourth used both printed resources and electronic ones. From their answers to question 12, it seemed that they did not agree on the most effective resource in the teaching and learning process. Three teachers agreed that e-books were more available and effective than printed books in the teaching and learning process, while the fourth one said the opposite. Question 13 unveiled that all the teachers were in accord of the various advantages of reading e-books. They said that e-books were easy to get and cheaper (saving time and money), accessible, updated by time, read anywhere using PCs, tablets, and smart phones, the content is shareable… in addition to many other listed advantages. The final question of the interview was about the reading strategies that helped the learners to comprehend the text quickly. The majority of

them had listed many strategies, but they had agreed on skimming and scanning as the best strategies, in addition to highlighting the purpose of reading, taking effective notes, summarizing, using dictionaries, jotting down the new words and using them in new sentences of their own, engaging prior knowledge, questioning, and explaining key words.

Conclusion

Based on the analysis and the interpretation of the teachers' interview, we had noticed that teachers were highly aware of the difficulties that EFL students faced while reading. In addition to that, they had suggested including the reading module into the curriculum in order to improve student's reading comprehension. Furthermore, teachers found that e-books were easier, cheaper, more accessible, more available, and more favorable by the majority of students. If both teachers and students had the available tools to interact with e-books, the result would undoubtedly have a positive impact on the process. Moreover, it had been noted that teachers were aware of the strong relationship between e-books and reading comprehension due to the positive improvements that students made.

II. Pedagogical Implications and Limitations of the Study

The results obtained from this study have multiple implications for improving EFL reading comprehension. These implications are drawn from the analysis of the results of the two research tools; the experimental design and teachers' interviews. This part is devoted to offer some pedagogical solutions that are translated by researchers into recommendations for university, teachers, as well as learners, which may be contributed to foster their reading abilities and support in improving their comprehension through reading e-books.

On the light of the present study, which highlights the concept of reading comprehension and the importance of e-books, some recommendations are presented aiming at improving students' reading comprehension abilities via raising their awareness towards the importance of using eBooks.

• Recommendations for University

1. The educational institution should include the reading module in the EFL curricula because EFL learners need to develop their reading, enrich their vocabulary, and build their background knowledge.

2. The educational institution should give importance to the time loaded to teach reading skill. It should allocate time for the reading techniques and strategy instruction within the written expression module.

• Recommendations for Teachers

The results that are obtained from teacher's interview help to suggest some recommendations for teachers in order to increase their awareness in reading and reading difficulties. Since reading is very important in EFL learning, learning to read is the right way. It is the responsibility of the teacher to promote learners' reading; however, students might encounter different difficulties in reading due to several reasons. As a result, teachers need to work hard and search for solutions to overcome all their students' reading problems. Those solutions include:

- Selecting good topics with suitable tasks.

- Preparing a clear, concise, and precise lesson plan.

- Making use of the learning materials that would simplify and make the lesson easy to understand.

- Creating a good atmosphere where all the students would feel free to express themselves.

- Encouraging group work because students might learn from each other, and also could create a kind of challenge between the students, so that they would keep improving.

- Teaching students the reading strategies like prediction, mind mapping, skimming, and scanning and showing them how to apply them effectively.

- Establishing a motivating context (that would help students discover the benefits of reading

and give them the opportunity to choose any type of text to read) in order to teach them reading comprehension.

- Changing the use of printed books and replacing them with electronic materials since students are of new generation and addicted to the new technology. This would raise their motivation to read and to foster their comprehension.

- Incorporating strategies with technological resources such as iPods and tablets which would help increase students' comprehension and aid them to achieve better reading skills.

- Changing the way and the media of reading through advising them to download e-books or the needed information, in their digital devices, as visual materials, this might increase their motivation towards learning as well as their creativity instead of fixing the attention only on the traditional printed books for which not all the students have access to.

• Recommendations for Learners

From the results of student's experiment, we suggest some recommendations for second year students' of Abdelhafid Boussouf, in Mila University Center, to raise their awareness about reading to overlap the reading problems and to increase the amount of reading e-books. Those recommendations are:

- Selecting interesting topics and texts. This would made learners more involved.

- Using new techniques in teaching reading.

- Teaching learners that they need to have purpose behind their reading.

- Teaching them how to select the appropriate strategy since there are different strategies.

- Promoting students to read extensively and not to rely on what they read in the classroom, since extensive reading might lead students to read and learn more about English culture and literature, also extensive reading might lead them to recognize a lot of words which would help them in interaction and communication, in this way, extensive reading would be beneficial for students.

- Students should give the reading skill its real importance, and not to neglect it since it is one of the four skills that build L2 proficiency.

- Students reading difficulties could be treated through bridging the gap between the teachers and their students through giving attention to reading ability.

- Students should be actively engaged in the reading process because the more they read, the more they would comprehend the material to be read; and then, the more they would enhance their general learning ability.

- Students should engage more in social media where they publish books, novels or any English piece of writing. They ought to meet good readers from their environment or elsewhere, share ideas and information as well as encourage and challenge each other.

- In order to be a good reader, students also should plan and organize their readings before starting to read. As we are in a technological world, it is suggested to read e-books through using the handheld e-devices because of their advantages ranging from their free access, portability, and the usefulness in vocabulary learning as already has been approved by the findings that are achieved through our gathered-data tools. E-books may positively refresh minds with new terms and revive the already known vocabulary.

• **Limitations of the Study**

The most significant limitations that this study has encountered is that students and teachers are no more coming to the university to learn or teach because of the corona virus that hit all over the world. This made it difficult to complete all the parts of the experiment and to do the interview with teachers. In addition to these circumstances, it has been really difficult to continue the work and keep in touch with teachers and students on emails or social media. The other limitation is that reading is not taught at EFL classrooms; therefore, it is very hard to investigate the opinions of both students and teachers about reading since it is not implemented in the LMD system.

GENERAL CONCLUSION

This study is concerned with the effect of e-books on reading comprehension as represented by test scores. E-reading is a more active activity, involved more flexible reading strategies, as the reader has to assess the significance of the multiplicity of materials he comes across. Moreover, reading electronic texts means an interaction between a text and the reader, as the reader could request a context-specific definition of difficult words provided by accompanying dictionary or glossary. Thus, the reader is given an immediate feedback, which enhances comprehension.

Based on statistical analysis, the results obtained, in this study, show a significant positive effect. Such results have led to conclude that this instructional method improves the students' reading comprehension abilities, as shown by the improvement in the reading comprehension scores of the experiment from the pre-test to the post-test (the t value in the paired samples t test equals =15.18, moreover, the t value in the independent samples t test equals =6.44). Consequently, the alternative hypothesis which states that e-books, as reading materials, lead to improvement in the students' reading comprehension performance is confirmed. Data obtained from the second means of research, the interview, confirm that using electronic resources in reading is marginalized, the difficulties revolve around student's lack of motivation, vocabulary, fluency, comprehension, language, and topic genre, and this is an inevitable consequence of neglecting reading, as a module, and updating reading materials according to learners' interests and needs. Such problems can be solved by depending on electronic books. On the basis of teachers' opinions, e-books can solve various problems since they consider them as appropriate and effective reading resources. In addition, teachers have agreed on focusing on scanning and skimming as the best strategies for fostering reading comprehension.

As a concluding remark, and with reference to the obtained outcomes, significant enhancements are thought to be accomplished through the application of e-books to ameliorate students' reading comprehension. This work does not pretend to be exhaustive; it remains a trial to examine the prominent role of e-books in improving L2 learners' reading comprehension, which needs a more elaboration and more research since many questions are still open to debate concerning this educational issue.

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APPENDICES

Appendix 1

(The Reading Comprehension Test)

Text

Philosophy in the second half of the 19th century was based more on biology and history than on mathematics and physics. Revolutionary thought drifted away from metaphysics and epistemology and shifted more towards ideologies in science, politics, and sociology. Pragmatism became the most vigorous school of thought in American philosophy during this time, and it continued the empiricist tradition of grounding knowledge on experience and stressing the inductive procedures of experimental science. The three most important pragmatists of this period were the American philosophers Charles Peirce (1839-1914), considered to be the first of the American pragmatists, William James (1842-1910), the first great American psychologist, and John Dewey (1859-1952), who further developed the pragmatic principles of Peirce and James into a comprehensive system of thought that he called "experimental naturalism", or "instrumentalism".

Pragmatism was generally critical of traditional western philosophy, especially the notion that there are absolute truths and absolute values. In contrast, Josiah Royce (1855-1916), was a leading American exponent of idealism at this time, who believed in an absolute truth and held that human thought and the external world were unified. Pragmatism called for ideas and theories to be tested in practice, assessing whether they produced desirable or undesirable results. Although pragmatism was popular for a time in Europe, most agree that it epitomized the American faith in know-how and practicality, and the equally American distrust of abstract theories and ideologies. Pragmatism is best understood in its historical and cultural context. It arose during a period of rapid scientific advancement, industrialization, and material progress; a time when the theory of evolution suggested to many thinkers that humanity and society are in a perpetual state of progress. This period also saw a decline in

traditional religious beliefs and values. As a result, it became necessary to rethink fundamental ideas about values, religion, science, community, and individuality. Pragmatists regarded all theories and institutions as tentative hypotheses and solutions. According to their critics, the pragmatist's refusal to affirm any absolutes carried negative implications for society, challenging the foundations of society's institutions.

Questions:

01. What is this passage primarily about?

……………………………………………………………………………………………………

……………………………………………………………………………………………………

…………………………………………………………………………………………………….

02**.** Which of the following is true, according to the passage?

(A) absolute truths and values are notions in western traditional philosophy

(B) John Dewey was the first great American psychologist

(C) the empiricist tradition is part of traditional western philosophy

(D) revolutionary thought was not pragmatic

03**.** The phrase "at this time" in line 14 refers to:

(A) at the time traditional western philosophy was dominant in America

(B) at the time pragmatism was popular in Europe

(C) 1855-1916

(D) the second half of the 19th century

04**.** According to the passage, pragmatism was more popular in America than Europe because

(A) Americans had greater acceptance of the theory of evolution

(B) it epitomized the American faith in know-how and practicality

(C) Europe had a more traditional society based on a much longer history

(D) Industrialization and material progress was occurring at a faster pace in America at that time

05. Which of the following can be inferred from the passage?

(A) Josiah Royce considered Charles Peirce to be challenging the foundations of society's institutions

(B) Charles Peirce considered Josiah Royce to be too influenced by the theory of evolution

(C) John Dewey would not have developed his system of thought called "experimental naturalism" or "instrumentalism" without the pioneering work of Charles Peirce and William James

(D) Josiah Royce was a revolutionary thinker

Appendix 2

(Teachers' Interview)

Dear teacher,

You are kindly requested to spare some time, from your busy schedule, and respond to this interview that aims to collect information about the effect of E-books on students' reading comprehension. Your answers will be most appreciated and will be kept anonymous. Thank you in advance for your cooperation.

Part One: General Questions

Q1. What degree do you hold?

Q2. How long have you been teaching English at university?

Q3. What are the modules that you have taught?

Part two: Reading

Q4. What can you say about the importance of reading for EFL learners?

Q5. Do you think that reading as a skill is neglected in English teaching classes in comparison to other skills?

Q6. In your opinion, do you think that your students read for:

    a- Academic purposes.

    b- Pleasure.

Q7. Which kind of difficulties do you have while teaching the reading skill?

*Students lack of:

  a- Motivation

  b- Vocabulary

  c- Fluency

  d- Comprehension

  e- Language

f- Topic genre

Q8. What do you suggest as solutions to overcome these difficulties and improve the EFL students' reading comprehension?

Q9. What are the techniques that you use in the class when teaching reading comprehension?

   a- Explaining in French, Arabic or Berber

   b- Using the target language all the time

   c- Asking learners to use dictionaries

   d- Identifying important events and concepts in the text

   e- Testing comprehension with questions

   f- Giving students practice with new words

   g- Asking students to summarize the general idea

   h- Others

Q10. What is the role of new technologies for EFL readers?

   a- Positive

   b- Negative

Part Three: Reading E-books Importance

Q11. When your students have a home work to do, do you provide them with printed resources or electronic ones? Please justify the chosen answer.

Q12. Are e-books more effective than printed ones in the teaching and learning process?

Q13. According to you, what are the advantages of reading e-books?

Q14. In your view, what are the reading strategies that help the student to comprehend what s/he reads quickly?

Appendix 3

(List of Novels Given to Students to Read)

- "Pride and Prejudice" by: Jane Austen.

- "The Old Man and the Sea" by: Ernest Hemingway.

- "The Alchemist" by: Paulo Coelho.

- "Great Expectations" by: Charles Dickens.

- "The Fault in our Stars" by: John Green.

- "Hamlet" (the modern version) by: William Shakespeare.

- "The Great Gatsby" By: F. Scott Fitzgerald.

- "And Then There Were None" by: Agatha Christi.

- "Animal Farm" by: George Orwell.

- "Oliver Twist (the modern version)" by: Charles Dickens.

- "Heart of darkness" by: Joseph Conrad.

- "Things Fall Apart" by: Chinua Achebe.

- "Emma" (the modern version) by: Jane Austen.

- "A Tale of Two Cities" by: Charles Dickens.

Résumé

La lecture, en Anglais, est la source de connaissances pour la compréhension de l'écoute, l'expression orale, et l'expression écrite. Elle est l'une des compétences réceptives dont les étudiants EFL ont besoin pour développer leurs compétences en L2. En raison de sa complexité, les étudiants ne parviennent pas à comprendre la lecture. Cette recherche met en lumière le problème de la compréhension insuffisante des étudiants. Elle examine l'effet de la lecture de livres électroniques sur la Compréhension de la lecture des étudiants EFL de la deuxième année. Cette enquête est basée sur les hypothèses suivantes : l'hypothèse nulle suggère qu'il n'y a pas de relation entre la lecture de livres électroniques et la compréhension de la lecture, et l'hypothèse alternative suggère qu'il existe une relation forte entre la lecture de livres électroniques et l'amélioration de la compréhension à la lecture des étudiants EFL. Afin de tester ces hypothèses, une méthodologie mixte a été retenue, comprenant des données quantitatives et qualitatives. Tout d'abord, une expérimentation a été menée sur un échantillon d'étudiants de 2ème année d'anglais, à l'Université de Mila. Ensuite, des enseignants d'EFL ont été interviewés, afin d'obtenir plus de données sur le sujet. Basé sur l'analyse statistique, les résultats du pré-test et du post-test, tirés de l'expérimentation (le t-valeur dans les échantillons appariés t-test est égale = 15.18, de plus, la valeur t dans les échantillons indépendants t-test égal = 6.44), ont conduit à la conclusion suivante: L'utilisation de livres électroniques améliore les capacités de compréhension à la lecture des étudiants. Sur la base des résultats de l'entretien avec les enseignants, les livres électroniques ont été évalués des ressources pertinentes et efficaces pour résoudre les problèmes linguistiques des étudiants. De plus, les enseignants considèrent de la lecture courante et la lecture diagnostic comme les meilleures stratégies pour améliorer la compréhension à la lecture. À la lumière de ces résultats, l'étude a été couronnée par quelques implications pédagogiques utiles, et

recommandations; pour un enseignement et un apprentissage efficaces de la langue en anglaise.

Mots clés : Lecture, Compréhension de la lecture, Livres Electroniques.

الملخص

تعتبر القراءة في اللغة الإنجليزية مصدر المعرفة للاستماع والتحدث والكتابة. فهي إحدى مهارات الاستيعاب التي يحتاجها طلاب اللغة الإنجليزية كلغة أجنبية لتطوير كفاءتهم في اللغة الثانية. و بسبب تعقيدها ، يفشل الطلاب في تحقيق فهم القراءة. كما يسلط هذا البحث الضوء على مشكلة ضعف فهم الطلاب لقراءة نصوص اللغة الإنجليزية. حيث يدرس تأثير قراءة الكتب الإلكترونية على الفهم القرائي لطلاب السنة الثانية للغة الإنجليزية و يعتمد هذا التحقيق على الفرضيات التالية: الفرضية الصفرية تشير إلى عدم وجود علاقة بين قراءة الكتب الإلكترونية وفهم القراءة. أما الفرضية البديلة فتقترح أن هناك علاقة قوية بين قراءة الكتب الإلكترونية وتحسين الفهم القرائي لطلاب اللغة الإنجليزية. من أجل اختبار هذه الفرضيات ، تم اختيار منهجية مختلطة ، بما في ذلك البيانات النوعية والكمية. أولاً ، أجريت تجربة على عينة من طلاب السنة الثانية للغة الإنجليزية بجامعة ميلة. بعد ذلك، تمت مقابلة أساتذة قسم اللغة الإنجليزية، من أجل الحصول على مزيد من البيانات حول الموضوع. بناءً على التحليل الإحصائي ، فقد أدت نتائج الاختبار القبلي و البعدي، المستمدة من التجربة (قيمة 'ث' في العينات المزدوجة ،' اختبار' ث' يساوي = 15.18 ، علاوة على ذلك فان قيمة 'ث' في العينات المستقلة، اختبار'ث' يساوي = 6.44) إلى الاستنتاج التالي: أدى استخدام الكتب الإلكترونية كمواد للقراءة إلى تحسين قدرة الطلاب على الفهم القرائي. و على أساس نتائج المقابلة التي أجريت مع الأساتذة، فانه تم تقييم الكتب الإلكترونية على أنها موارد ذات صلة وفعالة لحل مشاكل الطلاب اللغوية. بالإضافة إلى ذلك، فقد أجمعوا الأساتذة على أن القراءة السريعة و القراءة التفحيصية أفضل إستراتيجيات تحسين فهم القراءة. و في ضوء نتائج هذه الأبحاث، توجت الدراسة ببعض الآثار التربوية والتوصيات المفيدة لتعليم القراءة والتعلم الفعال.

الكلمات المفتاحية : القراءة ، الفهم القرائي ، الكتب الالكترونية.