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**ENHANCING READING SPEED FOR
COMPREHENSION IN EFL CLASSES**

The Case of First Year LMD Students, University of Constantine

*A Dissertation Submitted in partial Fulfillment of the Requirements
for the Magister Degree in Didactics: Reading and Writing Convergences*

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DEDICATION

To my Father's memory

To my dear mother and benevolent brother Ahmed

To my beloved soulmate Mourad and Sweetheart angels

Alaa Selsabil and Ritedj Yasmine

To the post graduation 2005

To all my teachers

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ABSTRACT

The present study aims at investigating the nature of the relationship between reading speed and reading comprehension. It further attempts to examine the possibility of enhancing students' reading speed without a concomitant decrease in reading comprehension by including paced-reading activities and certain reading strategies; namely skimming, scanning, and prediction from the title in students' reading courses. It takes the case of first-year LMD students at Constantine University.

The current study is stimulated by the fact that reading speed is a cardinal factor which constitutes, in combination with reading comprehension, the two basic components of skilled reading. Furthermore, slow, disfluent reading is conceived by EFL teachers as a major handicap for EFL students.

To achieve the aforementioned aims, an empirical study is carried out where 56 students participate. The study sample is divided into two groups: an experimental group is submitted to paced-reading training, and a control group which is not trained at all.

To determine the nature of relationship between reading speed and comprehension, the correlation coefficient (r) is calculated. It reveals a moderate positive correlation between the study variables. In addition, the results obtained in the pretest and post tests are analyzed via the statistical student t-test. The latter shows an improvement in reading speed in favour of the experimental group participants without a concurrent decrease in their level of understanding.

LIST OF ABBREVIATIONS

| | |
|------|-------------------------------|
| CG: | Control Group |
| EG: | Experimental Group |
| EFL: | English as a Foreign Language |
| ESL: | English as a Second Language |
| FL: | Foreign Language |
| L1: | First Language |
| L2: | Second Language |
| MCQ: | Multiple Choice Questions |
| NRP: | National Reading Panel |
| T/F: | True/False Questions |
| W/m: | Words per Minute |
| %: | Percentage |

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INTRODUCTION

1. Statement of the Problem

'Reading' is by far the most eminent skill that plays a significant role in improving readers' language proficiency, especially in a foreign language setting. Actually, EFL learners basically rely on this skill to acquire knowledge as the FL is seldom spoken outside the classroom. Nevertheless, students tend to handle reading without adequate skillfulness, and this negatively affects their reading efficiency and causes comprehension deficiencies that are not easy to discern.

It has been established beyond the shadow of doubt that EFL students, in general, endure serious reading difficulties which are mainly caused by the lack of reading fluency. This is revealed through the great amount of time and effort they invest when they read. Added to this is their inefficient reading which is no more advanced than when they were young children. The majority of students tend to plough through a written print struggling in a word-by-word reading stumbling at every unknown word. This makes it more difficult to grasp the meaning of what they read and causes them to get struck on individual words which may not be absolutely essential to the general understanding of a text. Students seem to become absorbed by the printed text and are not nearly flexible in their reading speed; they tend to maintain their reading rate constant whatever their knowledge of the subject or the difficulty of the material. Normally, readers do not read every book at the same speed; they read a news paper, for instance, much more rapidly than an economics or physics textbook. This inflexibility, in fact, wastes students' capacity and causes their feeling of resentment for the reading activity.

The current study seeks to help our students, who are EFL learners, to increase their reading speed without affecting their reading comprehension. It is concerned with speed because to be efficient readers, students have to be able to achieve their reading as quickly and easily as possible; nevertheless, speed has no significance apart from readers' comprehension. Thus, our efforts as teachers have to be directed at assigning simple methods in order to assist students to improve their reading speed without missing comprehension. This will make it possible for them to save time and effort and to be able to double or even triple their rate of reading.

2. Aim of the Study

Admitting the fact that skilled reading involves both speed and comprehension (Perfitti, 1985) and that slow and effortful reading is a major hindrance for EFL students to achieve an effective comprehension of what they read (Fraser, 2004); hence, improving reading speed is a major factor for EFL educators. Starting from this point, the present study is intended to enhance first-year LMD students' reading speed through paced reading without reducing their reading comprehension.

3. Research Questions

Two main questions are involved in the current study:

- 1- What is the nature of the relationship between reading speed and reading comprehension? Are they totally independent or correlated variables?

- 2- Would training first-year LMD students of English as a foreign language to enhance their reading speed through paced-reading exercises lead to reading speed improvement without a concomitant decrease in reading comprehension?

4. The Hypothesis

In conducting the present study, we hypothesize that training first-year LMD students in paced-reading activities would improve their reading speed without a concomitant decrease in reading comprehension.

5. Definition of Variables

a. Reading

General Definition

Gouph and Hoover (1996: 3) define 'reading' as a twofold process: decoding and comprehension. For Gouph and Hoover (*ibid.*), "Decoding and comprehension[...] are the two halves of reading [...] for neither decoding in the absence of comprehension, nor comprehension in the absence of decoding , leads to any amount of reading.[....] Literacy - reading ability- can be found only in the presence of both decoding and comprehension". 'Decoding' is "the word recognition process that transforms print to words" (kamhi and Catts, 2002: 45), and 'comprehension' means "understanding the message that the print conveys" (Nation, 2005: 41).

Operational Definition

In the present study, reading will be understood as silent reading. Silent reading is considered as a "see and comprehend" rather than a "see, say, and comprehend process" (Buswell, in Dechant and Smith, 1961: 186). According to Buswell, silent reading should directly link letters to meaning without being sounded out.

b. Reading Speed

General Definition

Longman Dictionary of American English (2004: 882) defines 'speed' as "how fast something moves" or "the rate at which something happens or is done".

Operational Definition

In the present study, 'reading speed' is identified as how fast words are covered while reading. It is determined by dividing the number of words in a text by the reading time and is reported in words per minute (w/m).

c. Reading Comprehension:

Operational Definition

'Reading comprehension' is defined here as how well students understand and recognize important points in what they read. It is identified by the scores on comprehension tests as the students read the texts at their level. These scores are reported in a percentage form (%). For the aim of training, 70% of text understanding is satisfactory as reading comprehension is measured in relation to speed (Nuttall, 1982: 37; Deleeuw, 1965: 18).

6. Means of Research

To assess the hypothesis stated above, an experimental design is adopted where 56 students have participated. The whole sample is pretested and divided into one experimental and one control group. The former has received a two-month training to enhance reading speed through a series of paced-reading activities. The control group participants have not been submitted to paced-reading training. They have solely been given out the same passages used by the experimental group in the training to read at their normal speed and answer comprehension questions.

Three measures are adopted in this study to assess the hypothesis. The correlation coefficient (r) is calculated to examine the relationship between reading speed and reading comprehension in the pretest and posttest. Comparison of the means and two t-tests are applied to compare the results of the experimental and control group. The two t-tests are

computed by means of the participants' scores in the posttest: one is relevant to reading speed, and the other one is pertinent to reading comprehension.

7. Structure of the Dissertation

The dissertation is divided into five chapters. Throughout the literary survey, we have traveled so far in the human mind from the moment the eyes get the external information until the reader experiences a click of comprehension. In this vein, two chapters are set.

In the first chapter, the flow of the external information is tracked. How this information proceeds through the eyes to be 'seen' by the brain is traced. This input carries out its route in the different mental systems proceeding through three main information stores: the iconic store, short-term memory, and long-term memory. This chapter sheds light on the different reading models; namely the bottom-up, the top-down and the interactive models. It also stresses the importance of the working memory as well as purposeful and flexible reading.

The second chapter continues its pursuit of the way the written information takes throughout the different comprehension processes until grasping the meaning of a print takes place. This Chapter is divided into two sections. The first section focuses on the description of how written information proceeds through the lower and higher-level processes. Sources of comprehension difficulties along with a number of reading strategies to overcome comprehension impairment are provided. Emphasis in the second section, however, is placed on reading speed as being a crucial factor in reading comprehension. The theoretical background for the significance of reading speed is provided, and the importance of automatic word recognition is also stressed. Some faulty habits that slow reading down and which have to be avoided are presented, and a number of activities to improve reading speed are suggested.

The third chapter includes the field investigation. It aims at scrutinizing the nature of the relationship between reading speed and reading comprehension and seeks to examine the effect of including paced-reading activities on students' reading speed and comprehension. This chapter deals only with the collection of data. It opens with a brief discussion on the debate over the nature of the relationship between reading speed and reading comprehension as well as their position in EFL field of inquiry. The research questions, hypothesis, the population, and sample of the study are presented. The Choice of the design adopted is justified, and the materials implemented are fully discussed. The different phases of the treatment are also described starting with the pretest, moving to the treatment in which experimental group participants have been submitted to training in paced-reading and a number of reading strategies, and finally ending up with the posttest.

Chapter four deals with the analysis of data to determine reading speed and reading comprehension covariance and examines the effect of the training on the experimental group. The results are discussed and interpreted.

The fifth chapter compares the different findings drawn from the study with the ones obtained in past research, and proposes some pedagogical implications and recommendations. It also pinpoints the limitations of the study and provides some suggestions for future research.

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CHAPTER ONE

READING

Introduction

Reading is unique in its use of the eye and the brain. It is an intellectual feat that entails many intricate processes and skills. Throughout this chapter, we will travel inside the human mind in order to get a more profound understanding of reading and its mechanisms. This chapter provides the diverse definitions attributed to reading according to varying focuses. It also features the visual and mental processes of reading and thrashes out the eminent reading models; namely the bottom-up, the top-down, and the interactive models. The first chapter also accentuates the importance of the working memory along with purposeful and flexible reading.

1.1 Definition of Reading

Everyone has certainly had numerous experiences with reading that he might think forming its definition would be a relatively easy matter. Yet, as reading may mean many things to many people, a simple definition cannot adequately encompass all of its facets. Authors have furnished us with multiple descriptions of reading, often with varying nuances and emphases. A broad definition equates reading with the interpretation of experience, and a narrow one restricts it to the interpretation of the graphic symbols.

1.1.1 Reading Association with the Interpretation of Experience

Spencer states that "In the broadest sense, reading is the process of interpreting sense stimuli [...]. Reading is performed whenever one experiences sensory stimulation" (Spencer, 1946; in Dechant, 1991: 6). This definition encompasses reading pictures, reading the weather, facial expression...etc. Dechant (1991: 6) considers the detective, the

doctor, the geologist, and reading teacher as readers since each of them, respectively, can peruse crime clues, illness signs, rocks, as well as the symptoms of reading disability. Hence, everybody is a reader as he proceeds in the interpretation of what surrounds him. This definition, according to Dechant (*ibid.*), implies that learners have to possess the ability to construe the world around them before being able to decode the graphic symbols. It is only by acquiring this ability that they may assign meaning to letters. This has been expressed in Benjamin Franklin 1733 in *Poor Richard's Almanac* when he wrote: "Read much, but not too many books". (Franklin, 1733; in Dechant, *ibid.* 6).

This broad interpretation of reading in its simplest view entails all the persons regardless of their intellectual abilities, and reading can be achieved by those who can decipher the graphic marks as well as those who cannot. A more restrictive definition conceives reading as a complex cognitive activity which involves only the people who are able to interact and respond to the letters of a language.

1.1.2 Reading Association with the Interpretation of Graphic Symbols

Even the narrow definition, which relates reading to the interpretation of graphic signs, delineates reading in a variety of ways. A very basic definition, attributed to reading by common people, relates it to "matching sounds to letters" (Goodman, 1988: 11), or interpreting the sounds carried out by the letters. A more elaborate one, however, considers reading as "a complex interaction of cognitive and linguistic processes with which readers construct a meaningful representation of the writer's message" (Barmitz, 1986; in Dechant, 1991: 6). In like manner, reading requires a variety of high mental actions for a reader to understand a writer's intended meaning. Being in the same line, Harmer (2001: 153) perceives reading as being "an exercise dominated by the eyes and the brain, the eyes receive and the brain then has to work out the significance of these messages".

The aforementioned descriptions point out to letters' recognition and sight as necessary elements in the act of reading. Dechant (*op. cit.*, 23), however, contends that eventhough these two elements are important in reading; they are not the basic requisites for it. For him, experience is the primary requirement in reading. Dechant and Smith (1961: 20) add that reading is neither a mere sensory process nor a simple recognition of words. Printed words do not transmit sense; the essence of meaning stems from the reader's fund of experience. In this scope, Smith (1985: 99-102) points out that Reading exceeds linking sounds with letters to extracting meaning from a print. For this, two types of information are important in the act of reading: the visual information that we extract from the text, and the nonvisual information which includes our understanding of the language, our general ability in reading, our familiarity with the topic, and our general knowledge of the world (Smith, *ibid.*, 14-15).

Indeed, the ultimate goal of readers is to make sense of what is being read. This is highlighted in the National Reading Panel which puts forward that "a reader reads a text to understand what is read, to construct memory representations of what is understood, and to put this understanding to use" (NRP, 2000: 4-39). For Dechant (1991: 7) reading is the combination of word identification and comprehension, without each of them the act of reading is hampered. This idea is further supported by Pollatseek and Rayner (1989: 23) who assume that reading is being able to obtain the visual data from the print and to assimilate the author's messages. Alderson (2000: 3) totally agrees on the fact that comprehension is the ultimate goal of reading. He describes the process of reading from the time the eyes get the visual information until it is converted into meaning. He conceives reading as

an interaction between the reader and a text, a process which includes
looking at the print, decoding the marks on the pages, deciding what they

mean and how they related to each other, and also thinking about what the reader is reading. This process leads to comprehension.

(Alderson, 2000: 3).

Although comprehension is considered by many authorities as the end product of reading, others, however, conceive reading as bringing meaning rather than gaining it from the print. A reader achieves this by sharing his own experiences with those found in the passage. In this respect, Horn (1954; in Dechant and Smith, 1961: 22) states that the reader is stimulated by the author's printed words, but, in turn, he vests the author's words with his own sense relying on his own knowledge.

In considering reading as "a complex System of deriving meaning from print which entails numerous components", McShane (2005: 7) affords reading a definition that encompasses all the aforementioned interpretations and adds other constituents to the act of reading. The latter involves, according to her:

- An understanding of how speech sounds are related to print,
- Decoding (word identification) skills,
- Fluency,
- Vocabulary and background knowledge,
- Active comprehension strategies, and
- A motivation to read

She notes that the first four components of reading (phonemic awareness, decoding, fluency, and vocabulary) play a significant role in facilitating comprehension. McShane (*ibid.*, 13) stresses more precisely the importance of fluency in reading. She claims that "Fluency is vital to comprehension. A fluent reader identifies words rapidly and accurately with little effort, and is therefore able to focus on meaning".

From the above discussion, we recognize that there can be no simple definition of reading. A comprehensive description of the term would define reading as getting messages from a text. Readers relate the graphic shapes to their own fund of experience and share in bringing a specific meaning from the numerous ones involved in the print.

1.2 Reading Processes

Understanding the process of reading is probably important to an understanding of its nature, but at the same time it is evidently a difficult thing to do. Since reading is "a complex organization of patterns of high mental process" (Gates, 1949: 3), its analysis requires the ability to describe "very many of the most intricate workings of the human mind (Huey, 1968: 8). So, answering one of the major questions that researchers in the field of reading have sought to answer: "what goes on in the visual system and the brain during the process of reading? (Davies, 1995: 57) requires us to shed some light on what really happens in our eyes and brain when we read.

Reading entails two main processes (Dechant, 1991: 9): the visual process which involves receiving the visual information via the eyes under the brain's direction, and the mental process which requires the brain in the interpretation of this information.

1.2.1 The Visual Process in Reading

Obviously, reading begins as a sensory process. The reader must react visually to the graphic symbols; an act which is made impossible in the absence of light or when our eyes are closed. It is through the vision that a reader is able to recognize the letters and words (Dechant, *ibid.*, 45).

1.2.1.1 The Role of Vision in Reading

It is commonly believed that our eyes are responsible for all what we see. It is generally assumed that we perceive things immediately after we turn our eyes upon them. However, "The eyes have a part to play in reading" (Smith, 1985: 12). The eyes do not see; what happens actually is that they merely receive the visual information under the form of light and convert it to the brain under the form of nervous energy. The brain then translates this data into meaningful information. In reality, the eyes do not see; they only look.

1.2.1.2 Eye-Movements in Reading

In the perception of the outside world, the eyes do not move continuously only if they are fixed on a moving thing. The eyes rather jump from one side to another to pick information. When somebody looks around a room, he can only see distinctly when his eyes are still (motionless); for the eyes make a large number of rapid movements or jumps and he sees in the pauses between the jumps (Smith, *ibid.*, 20).

Likewise, in reading in English, the eyes do not glide continuously over each line of a print from left to right; they rather progress by little jumps or leaps called saccades. The eyes move then stop along the lines in a saccadic movement. These intervening stops or pauses are called fixations. The eyes can only see or pick information when they are still or motionless. When the eyes are in motion, they are functionally blind because their very rapid movement produces only a vague image of the print (Smith, 1985: 20). Slow readers tend to read at the word level (word-by-word) making more fixations, whereas faster readers pick up 2.5 to 3 words per fixation (Coman and Heavers, 1998: 87). Furthermore, novice readers' eye fixations tend to be longer than those of experienced readers, and laborious materials require more eye pauses than simpler ones (Orasanu, 1986: 12).

1.2.2 The Mental Process in Reading

How the visual information is going to be processed by the brain, in the act of reading, seems to be of a great concern. To this end, a brief description of how this data goes ahead in the human information processing system is indispensable. The latter is depicted via a model relying on three types of information storage: The sensory or iconic store, the short-term memory store, and the long-term memory store (Dechant, 1991: 82). Each of them is distinguished from the other two ones in terms of its processing capacity and the way it functions.

1.2.2.1 The Sensory or Iconic Store

It is the lowest level in the information processing system where visual information lasts for a very limited time. This place maintains the physical features of a stimulus after its termination (Pollatsek and Rayner, 1989: 15). Dechant (*op.cit.*, 83) defines the sensory store as "the visual image", the "icon" where an input is immediately changed into sensation and held for 250 millisecond. In reading, the images of the words are imprinted on the visual sensory memory after the stimulus has gone off (Dechant, *ibid.*). The content of the sensory store decays rapidly whenever new visual information reaches it.

1.2.2.2 Short -Term Store or Working Memory Store

Short-term memory is considered as a more convenient structure for holding information got by the eyes because it is more permanent than the sensory store (Pollatsek and Rayner, *op. cit.*, 17). It is where this data is changed into meaning. More precisely, in reading, it is where the analysis of the words and sentences is undertaken (Dechant, *op. cit.*, 83). Short-term memory capacity is limited to about 7 plus or minus two items, and its retention for information lasts for approximately 30 seconds as long as the information is processed. For a longer time retention, rehearsal is needed (repeating information to

oneself over and over). Working memory and short memory are used interchangeably. It is considered as an active workplace. For McGuinness (2005: 285), it is the equivalent of "attention span" or "span of consciousness" since it is what is in one's immediate consciousness or awareness at any given time.

1.2.2.3 Long-Term Memory Store

It is generally believed that once information enters long term memory, it is stored there permanently. In reading, it is the place where the sense of sentences is stored. Long-term memory is distinguished by its unlimited capacity. Tulving (1972; in Dechant, *op. cit.*, 19) divided long term memory into two parts: episodic memory and semantic memory.

- a) Episodic memory entails the sequence of events along one's life.
- b) Semantic memory includes all the knowledge one may have. It is very significant in reading since the reader relies heavily on his background knowledge to make sense of the print. Apart from the semantic memory, the lexicon which includes the meanings of all the words someone knows is very essential in reading. In order to understand what is being read and store the new meanings in long-term memory, access to this lexicon in long term-memory is deemed necessary.

1.3 Importance of the Working Memory in Reading

Reading cannot stand without memory, as life can not stand without oxygen. It is worthwhile to pin down which memory systems matter most in the act of reading. The working memory is vital in reading. Smith (2004: 98) stresses its significance stating that it is of "central importance in reading. It is where you lodge the traces of what you have just read while you go on to make sense of the few next words". Daneman (1991: 527) specifies the working memory with two main functions: one of them consists of

information retention when attention is focused upon something, and the other one involves information processing and conversion into meaning. The working memory is the space where comprehension processes are introduced (Pollatsek and Rayner, 1989: 18); partly processed sentences are stored, grouping words into chunks is achieved (Dechant, 1991: 84), and chains of ideas are joined together (Daneman, *op. cit.*, 528).

Being conceived as a dynamic workplace where comprehension processes take place, the working memory may be easily overwhelmed. This, in fact, hampers the reader to understand what is being read and turns him into reading nonsense. Considering its limited capacity to hold (5–7) items, short-term memory becomes overloaded if a reader fills it with detailed information (Smith, 1985: 37). By focusing his attention on identifying only four or five letters, short-term memory becomes fully occupied. As Smith (*ibid.*, 39) puts it forward, this reader, in attempting to decipher the word elephant, will forget E... L...E...P while processing H...A...N...T. He will even forget the beginning of a sentence before he reaches its end. This means that when attention is directed to something else, the original content of short-term memory is lost.

The reason behind this handicap, as explained by Smith (2004: 99), is that as the elements of one fixation go into short-term memory, other elements of a previous fixation are pushed out. For Smith (1985: 39-40) reading is not a matter of recognizing each letter or even each word in isolation. Trying to get every detail from the print leads short-term memory to be overloaded. Reading efficiently, then, requires clustering the incoming information into meaningful chunks. This idea has been advanced by Dechant (*op.cit.*, 84) who contends that the amount of data the working memory can retain depends on its form being either single letters, single words, or a related set of words. He argues that by

grouping information into meaningful chunks, learners can store not only seven items or letters, but even seven words or seven chunks of information.

The principle lying behind this, as conceived by Itzkoff (1996: 38), is that when we read, our mind searches for meaning. The latter is only construed by grouping the letters into words and the words into sentences. The brain ignores the component letters and assembles them quickly into meaning. Itzkoff (*ibid.*) stresses that a child who reads a meaningful word or sentence and understands it permits new information to get into his working memory since the old one is stored into long-term memory; however, the one who stays at the level of letters, trying to decipher each one separately, spends more time, overloads his short term memory, and ends up reading nonsense. This idea is highlighted by Smith (1985: 40) when he notes that reading is trying to make sense out of what we read. He states: "worrying about letters will make word identification difficult; trying to read nonsense will make reading impossible".

Eventually, skilled reading does not imply a larger working memory capacity, but rather a more effective use of this capacity. To achieve the ultimate goal of the reading act which is comprehension, short-term memory should be used conveniently; this is made possible by looking for sense while reading rather than worrying about separate letters and words.

1.4 Models of the Reading Process

Attempts at building explicit models of the reading process that describe how information proceeds from the time the eyes meet the page until the reader experiences the "click of comprehension" have revealed a great misunderstanding and have generated many controversies among model builders (Samuels and Kamil, 2002: 188).

Model builders have divided themselves into two groups. Those who were influenced by the behaviouristic era before the mid 1960's, developed models which attempted to depict how stimuli such as printed words and word recognition responses are related relying only on observable events external of the individual. These scholars named their models as bottom-up models. The other group of model builders, being influenced by the emergence of cognitive psychology, after the mid 1960's, developed what they labeled as the top- down model. The latter attempted to explain what goes on within the human mind in the process of reading (Samuels and Kamil, *ibid.*, 188). A third group of researchers placed themselves within the reading field in order to bring a sort of compromise between the bottom-up and the top-down models of reading; they labelled their theory as the interactive model (*ibid.*)

Before we embark on discussing the different types of the models of reading, we need first to introduce the concept of a model. A model of a reading process is considered by Davies (1995: 57) as "a formalized, usually visually represented theory of what goes on in the eyes and the mind when readers are comprehending (or miscomprehending) text". Davies puts forward some characteristics for a model as being "a systematic set of guesses or predictions about a hidden process, which are then subjected to testing through experimental studies "*(ibid.)*.

1.4.1 The Bottom -Up Model

The bottom-up approach was typically linked to behaviorism in the 1940's and 1950's. (Alderson, 2000: 17). According to bottom-up principles, a text is organized in a form of a hierarchy from the smallest linguistic units to the higher units in this order of levels: the grapho-phonetic, phonemic, syllabic, morphemic, word and sentence levels. To understand the text, the reader processes the smallest units and, bit by bit, builds up these units to

decode the higher ones (Dechant, 1991: 23). Stanovich (1980; in Samuels and Kamil, 2002: 212) states that bottom-up models tend to describe information flow in the form of distinct stages. Each stage changes the input and sends it to a higher stage for further transformations. Davies points out that Gough, being the outstanding figure of the bottom-up model, characterizes reading as a letter-by-letter sequence through text. He assumes that all the letters in the visual field must be treated individually before giving meaning to any string of letters (Gough, 1972; in Samuels and Kamil, 2002: 187).

In Fact, by advocating the sequential processing of a bottom-up model of reading, the Gough's model (1972) had an implication to teaching reading. It supports the phonic approaches which stress the fact that children need to learn to recognize letters prior to reading words (Alderson, *op. cit.*, 17). Moreover, it promotes practices in reading instruction which develop the learners' decoding abilities from bottom-up starting with single letters up to words and phrases (Dubin and Bycina, 1991: 196).

Nevertheless, Bottom-up models have manifested many noticeable shortcomings. The Gough model (1972), as being the basis for instruction, does not account for the fact that there are more than 166 grapho-phonetic rules for regular spelling-to-sound correspondences of English words which are not easy to teach. In addition, the serial processing of this model causes a lot of demands on the short-term memory forcing the readers to focus on letter-sound correspondences and, hence, prevents them from relying on other sources of information to understand the printed text (Davies, *op. cit.*, 60).

A sound criticism was directed by Stanovich (1980). It lies in the fact that bottom-up models lack feedback among the different stages or sequences of the model. This prevents the low processing stages to interact with the higher ones to decode meanings. This makes it difficult to account for sentence-context effect and the role of prior knowledge of the

topic of text to facilitate word recognition and comprehension (Stanovich, 1980; in Samuels and Kamil, 2002: 212).

From what has been said above, we admit that bottom-up processes are basic prerequisites for reading. Unless we can correctly recognize the letters of a language, we cannot even start to read a word. However, the knowledge, experience and the concepts that readers bring to the text are also part of the reading process; they are of a significant role in meaning construction. This, in fact, has paved the way for the emergence of a model to correct the pitfalls of the bottom-up model and to account for these new assumptions. This model is dubbed the top-down model of the reading process.

1.4.2 The Top -Down Model

According to Davies (1995: 61), the top-down models have been developed within the frameworks of psycholinguistics mainly those of Smith (1971, 1973) and Goodman (1969, 1970, 1975 and 1985). What makes this psycholinguistic model different is Goodman's focus on readers' predictions as the driving force of the model with little attention to visual decoding (Davies, *ibid.*, 61). In fact, this model stresses the reader's reliance on existing syntactic and semantic knowledge structures, so that reliance on grapho-phonetic knowledge can be minimized (Samuels and Kamil, *op. cit.*, 186). It is Goodman's emphasis on the central directing role of readers' predictions and background knowledge that makes them attribute the name "psycholinguistic guessing game" to reading (Alderson, 2000: 17). Another characteristic of Goodman's model, as being pointed out by Samuels and Kamil (2002, 186), is his use of the term 'decoding'. While this term is normally used to refer to the process of translation of the graphemes into phonemes, Goodman uses it to depict how either graphemes or phonemes are translated into meaning. In order to translate the graphemic input into phonemic one, he rather uses the term 'recoding'.

Dechant (1991: 25) defends the top-down model focusing on the fact that the processing of print begins in the mind of the readers by generating hypotheses about the text. In this way, readers engage in lower processes; that is to say, identifying letters and words only to confirm these hypotheses about the meaning of the print. From this perspective, the top-down models have been described as concept-driven or hypotheses-testing models (Dechant, *ibid.*, 25).

The top-down approach has been very influential in both L1 and L2 teaching methodology, especially in supporting the importance of prediction, guessing, and reading for the general idea at the expense of paying attention to letters and words. However, it has revealed many weaknesses; among them is the failure of its application in L2 contexts (Davies, *op. cit.*, 62). Another problem the top-down model has faced is the fact that readers may have little knowledge about the topic of a text, and so, they cannot generate hypotheses (Samuels and Kamil, 2002: 212). Furthermore, although a skilled reader is able to generate predictions, the amount of time necessary for this process is greater than the amount of time he needs to simply recognize the words (Samuels and Kamil, *ibid.*, 212).

From the above discussion, we highly value the role of readers as being quite active, from a top-down model's point of view. In making sense of a print, they share in the author's construction of meaning by matching what they already know with the meaning they derive from the text relying on their past experience and their knowledge of the language (Dubin and Bycina, 1991: 197). Nevertheless, the lack of interaction between the distinct processing stages of both bottom-up and top-down models, which are strictly serial models, unveils their deficiency and calls for an urgent correction. So, the interactive model was in the scene to bring up an immediate remedy and to offer a compromise between the two models.

1.4.3 The Interactive Model

Aiming at overcoming the shortcomings of both bottom-up and top-down models of the reading process, Rumelhart (1977; in Davies, 1995: 63) proposed the interactive model to account for both bottom-up and top-down processing .

Rumelhart's model (1977), in contrast to top-down models, gives a considerable attention to visual information. For him, the process of reading starts by taking up cues to meaning from the page by the eyes and ends with the construction of meaning. He views the skilled readers as being able to use both sensory and semantic information. The latter interacts in many ways during the process of reading to construct meaning (Rumelhart, 1977; in Davies, *op. cit.*, 64). According to Rumelhart (1977; in Samuels and Kamil, 2002: 57), linear models which pass information along in way and which prevent the interaction among the different stages of models contain serious deficiencies.

Interactive models, unlike bottom-up and top-down models, do not predetermine any direction for processing. Instead, the reader may engage in parallel processes relying on a range of information sources: visual, orthographic, lexical, semantic, syntactic and semantic information (Davies, *op. cit.*, 64). Sharing the same argument, McCormick (1987; in Dechant, 1991: 28) suggests that the reader carries out word identification and predictions at the same time. Furthermore, both higher-level and lower-level processes simultaneously help each other. Stanovich explains the parallel processing of information in interactive models as follows:

Interactive models of reading appear to provide a more accurate conceptualization of reading performance than do strictly top-down or bottom-up models. When combined with an assumption of compensatory processing (that a deficit in any particular process will result in greater reliance on other knowledge sources, regardless of their level in the processing hierarchy.

(Stanovitch, 1980; in Samuels and Kamil, 2002: 212).

1.5 Purpose in Reading

To satisfy their ordinary needs, people engage in diverse kinds of reading depending on their intentions or purposes and the context or situation they encounter. Instances of these situations are reading books, news papers, news reports, sports scores, weather forecasts, entertainment guides and advertisements, print on television guide, market summaries, restaurant menus, traffic and destination signs, recipes ... etc (Smith, 1985: 101). McShane (2005: 72) classifies readers' purposes into two types: learning about something and finding specific information. The first type of purposes entails searching a subject in a magazine article or in a newspaper, study for a test, reading for pleasure, and learning how to do something like in directions. The second type of reading purposes, on the other hand, involves reading to find specific information such as looking for a date in a list or checking the television listings.

Kucer (2005: 128) contends that the intention behind reading a particular text is tightly related to the way it is read. For him, the reader decides either consciously or unconsciously what he would do to attain his purpose. This leads him to take a "tentative plan of action" to act in a particular way to achieve his intended goal. Smith (1985: 102), on his part, conceives that someone who can read can get much information from the different aforementioned reading situations; yet, much of this data is not gained, for the sole reason that it is not needed. Readers tend to obtain only parts that are relevant to their needs (Smith, *ibid.*).

Alderson (2000: 50-51) elaborates this idea stressing that the purpose for which someone reads a text has a great impact on the process of reading; in other words, the manner in which he reads it and the skills required to be used, and the end product of this reading; that is to say, comprehension of the text and the amount of information being

recalled. According to Alderson (*Ibid.*), reading a short story for entertainment at bed time differs in all the three aspects (process, product, recall) from reading a history lecture for an examination the next day. He contends that:

The process [of reading] differs for the same reader on the same text at a different time or with a different purpose in reading. It is even more likely, then, that the process will be different for different readers on different texts at different times and with different purposes.

(Alderson, *ibid.*, 03)

Not only that the purpose of reading determines the way in which a text is being read, but the importance of any idea in a text is also influenced by the perspective from which it is read. For Kucer (*op. cit.*, 162), the reader's goal of reading impacts a great deal his decision about the text's ideas that he considers significant and need to be recalled from less important ones. Be added that, a reader's purpose has a direct and significant influence on how and what meanings are ultimately constructed by the reader who, according to Kucer (*ibid.*), has a say in deciding upon the importance of ideas.

Although we may engage in different kinds of reading for different purposes, the ultimate goal is comprehension. This is obvious since in studying or in trying to follow directions our ultimate goal is to grasp and recall what we have read. Even when we read for pleasure, our aim is to apprehend the material; otherwise, the act of reading would not be profitable. In like manner, reading is conceived as an active and purposeful act (Pressley and Afflerbach, 1995: in NRP, 2000: 4-39). This act has to be selective; the reader should be able to select the information that best suits his needs, not to 'Strive mechanically' to the whole data offered by the writer (Smith, 1985: 103). In this scope, Deleeuw (1965: 13) notes: "if the reader becomes passive, he is inclined to mistake or ignore his purpose. Lack of purpose is a great waste of capacity".

1.6 Flexibility in Reading

Admitting that not all written prints are treated in the same manner, and that the reason behind reading a text impacts significantly the how and the what to extract from it; a reader's purpose also affects his rate of reading a great deal. Readers tend to read every thing in the same speed, which causes them to waste time and energy. This is clearly expressed by Deleeuw (1965: 13) when he notes: "Readers in general seem to become subdued by the printed word and are not nearly flexible enough in their speed, whatever their knowledge of the subject or the difficulty of the material, this inflexibility wastes capacity".

For Deleeuw (*Ibid.*, 47.), as the amount of processing capacity is limited in human beings, the reader has to adjust his reading speed according to text difficulty; reading faster when the content is easy and spending more time when it is difficult. In the same line of thought, Fraser (2004:138) claims that reading rate is not constant. A reader changes it according to his purpose; his rate when he looks for specific information (scanning for a specific phone number in a directory), for instance, is not the same as in studying or preparing for an exam. Furthermore, familiarity with the text, its density, and the number of difficult vocabulary it contains, also affect the reader's speed of reading.

For Carrell, *et. al.*, (2002: 234), readers' shift from one reading speed to another should be appropriate to their reading purpose. According to them, reading for learning new information requires a full and detailed understanding from the reader's part. The latter engages his thinking whether the new information matches his general knowledge and fits with the previous information in a text. Reading a novel for pleasure, however, does not demand a careful reading nor remembering details of the story; a reader sometimes skips many pages when he gets bored. Getting information from a manual, on the other hand,

involves some forms of scanning for specific information or skimming to have a broad idea of its content. This is clearly stated by Bacon (in Billows, 1961: 212) when he states:

Some books are to be tasted, others to be swallowed, and some few to be chewed and digested, that is, some books are to be read only in parts, others to be read but not curiously, and some few to be read wholly, and with diligence and attention [...].

(Bacon; in Billows 1961: 212)

Bacon (*ibid.*) divides reading into four types:

1 - Leisurely light reading.

2 - (a) rapid scanning, as when searching in a newspaper for football scores.

(b) rapid scanning to glean salient points of a chapter or a book (skimming).

3 - serious analytic reflective reading.

4 - deputy reading – abstracts, reports ... etc.

As we read for all these purposes, we change our reading speed according to specific reading processes. According to Carver (1990; in Carver, 2000: 24-25), there are five distinct reading processes or "reading gears":

- Scanning: or searching a text for a specific word. It is the fastest process that involves only lexical access or word recognition.
- Skimming: The reader processes the text speedily in order to comprehend its gist. It involves semantic encoding as well as lexical access; not only are words recognized, but their meaning within the sentence is determined.
- Normal, ordinary reading or reading: It involves sentence integration in addition to lexical access and semantic encoding; that is to say, the meanings of individual

words in a sentence are assembled into a complete thought which is then related to previously constructed text meaning.

- Reading to learn: The reader not only constructs the text meaning, but also the understood information needs to be remembered.
- Reading to memorize: In addition to constructing a meaningful representation of a text, the reader has the added goal of being able to recall the information accurately.

Conclusion

No matter how reading is being defined and whatever definitions are attributed to it if all of them agree on the fact that reading is meaningless without comprehension and that understanding is the essence of reading. Accordingly, reading is best described as the product of decoding and comprehension without either of them the reading act is hampered (Nation, 2005: 41).

CHAPTER TWO: READING COMPREHENSION AND READING SPEED

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CHAPTER TWO

READING COMPREHENSION AND READING SPEED

Introduction

Reading speed and reading comprehension are tightly related factors (Nuttall, 1982: 33). Although it is not clear which one causes the other, excessive slow reading tends to hamper understanding (Nuttall, *ibid.*). This chapter attempts to elucidate the relationship between these two variables. In this vein, two sections are provided: The first section sheds light on reading comprehension being the ultimate goal of reading, and the second one underlines reading speed as a contributing factor in reading comprehension.

2.1 Section One: Reading Comprehension

Is reading comprehension a mere understanding of a written print? Is it as simple as getting information from a text? Since reading is, after all, primarily comprehension, the key question to ask is: what is a reader doing in his attempt to construct meaning when he is engaged in a mutual interaction with a written print? In this section, we will afford the diverse definitions attributed to reading comprehension and inspect the lower-level as well as the higher-level processes affecting reading comprehension. We will also point up the sources of reading comprehension difficulties and deal with its improvement through instruction and its assessment.

2.1.1 Definition of Reading Comprehension

A very lucid meaning accredited to comprehension is "understanding what you read" (McShane, 2005: 71). In fact, because the process of comprehension is more or less automatic for good readers, they tend to be unaware of how it proceeds. The definition of comprehension, however, is not as easy as it seems (McShane, *ibid.*). Understanding is a

very intricate process that entails as many definitions as reading; it is so mainly because comprehension is generally regarded as "the essence of reading "(Durkin, 1993; in Tankersly, 2005: 108).

For McShane (*op. cit.*, 70), a favoured definition would consider comprehension as an active process in which readers work at constructing meaning. Readers engage in a mutual relation with the printed text relying on their general knowledge about the world to get a message from the script. In this regard, comprehension is conceived as bridging what is known to what is being ignored and linking what is novel to what has been already recognized (Caraskillo and Segan, 1998: 73). Schank (1982: 5) elaborates on this argument stating that the bulk of understanding is vested to discern what has been implied. According to him, much of what is written is generally implied; it is left to our memories to find out what is missing. Unless the readers' background knowledge fits with the information met in the text, reading comprehension is hampered (Badrawi, 1992: 16).

Reading comprehension is further specified by Durkin (1993; in Ma and Med, 2005: 5) as a process that involves "Intentional thinking". According to this view, to understand a written material a reader engages his 'intentional', 'problem solving' and thinking processes. In like manner, what is printed in the text and what a reader generally knows bear on the meaning he constructs in his mutual interaction with the passage (Harris and Hodges, 1995: 39; in NRP, 2000: 4-5). In this respect, as comprehension takes place, words are recognized and their meanings are accessed in the reader's memory. Phrases and sentences are quickly processed so that their meanings do not fade before the next ones are handled. In addition, as a reader attempts to get the message conveyed by the writer, some obstacles may hinder him from understanding a specific point or from constructing the general meaning. His engagement in identifying these problems, reflecting upon them and finding

their solutions is part of the comprehension process. All these processes in which a reader partakes either consciously or unconsciously render comprehension an active process, and engage readers' interaction with a text seeking at 'constructing' or 'making meaning' (Kruidenier, 2002: 77) rather than merely getting it from the text.

The preceding definitions put the deliberate reasoning processes readers involve in order to understand a text as the central focus of their concern. They conceive that the meaning readers get is influenced by the knowledge outside their heads as well as information stored inside. Nevertheless, these descriptions fail to encompass many other factors which also bear on readers' ability to understand a script. These are: the reader's capacities and skills involved in the reading activity; the type of the text being read, its subject matter and density, and the social and cultural factors which constitute the context of reading (Ma and Med, 2005: 6).

A more extended definition which attempts to unveil the complex nature of comprehension is put forward by Snow in the Rand Report, *Reading for Understanding* (2002: xiii). It describes comprehension as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language". According to this interpretation, comprehension entails three elements (Snow, *ibid.*):

- The reader: who is doing the comprehending; here, we include all the abilities, knowledge, and experiences that a person brings to the act of reading.
- The text: what is to be comprehended; it includes any printed material.
- The activity: in which comprehension is a part; it involves the purposes, processes, and consequences pertinent to the act of reading.

These three elements are interwoven and influenced by the larger social and cultural context in which the reading occurs (Med and Ma, *op. cit.*).

2.1.2 Processes Affecting Reading Comprehension

Comprehension entails a number of sub processes: lower or word-level processes and higher or text-level processes (i.e., processes above the word level) specific to reading (Pressley, 2000: 546).

2.1.2.1 Lower-Level Processes Affecting Reading Comprehension

Word-level processes are involved in decoding words and accessing their meaning in memory. They consist of decoding and vocabulary:

2.1.2.1.1 Decoding

The decoding of words; i.e., going from the printed shapes to some articulatory or phonological representations of letters relying on graphemic-phonemic relationships, has genuinely been proved to be a major impediment to reading comprehension. Unless the reader is able to decode, his comprehension will be impaired (Adams, 1990; Metsala and Ehri, 1998; Pressley, 1998; in Pressley, 2000: 546). Skilled decoders do not sound unfamiliar words letter by letter; they are rather able to recognize letter chunks such as suffixes, prefixes, Latin and Greek roots...etc. This considerably affects word comprehension; in other words, the more readers develop the skill to recognize these chunks quickly, the more this facilitates their comprehension. This is mainly because both recognition and comprehension of words take place in short term memory which is limited in its capacity (5 – 7 elements). The more capacity is devoted to the decoding of vocabulary, the less capacity is available for its comprehension; the more automatic and fluent word decoding is, the better its comprehension tends to be. So, at the level of words, comprehension efficiency depends heavily on decoding adequacy (Gough and Tunmer, 1986; in Pressley, 2000: 547).

2.1.2.1.2 Vocabulary

As comprehension depends on word-level processing, the quantity of vocabulary a reader knows is closely linked to his comprehension skills (Anderson and Free body, 1981; Nagy, Anderson and Herman, 1987; in Pressley, 2000: 548). Experimental data find out that a more extensive vocabulary promotes comprehension skills (Beck, Perfetti and McKeown, 1982; McKeown, Beck, Omanson and Perfetti; 1983; McKeown, Beck, Omanson and People, 1985; in Pressley, 2000: 548).

However, as skilled decoding tends to affect reading comprehension, it also relies much on understanding. That is to say, the more fluently letters are linked to their sounds, the less conscious effort is required for this, and the more capacity is left over for comprehension of words. On the other hand, skilled deciphering of vocabulary depends partially on comprehension; i.e., readers have to consider the context in order to determine if the words they read make sense. In like manner, readers are able to detect the misread lexicons if they do not match to the context in which they occur. (Pressley, 2000, *op.cit.*, 547-548).

In regard to the extent to attribute context effects into word recognition process, word recognition theories have taken antagonistic positions. The bottom-up model considers word recognition as a bottom-up process (letters, sounds, and words); whole language (top-down) theory, on the other hand, views it as being context dependent. Recognition of a word, according to them, involves graphemic – phonemic cues, syntactic cues (information about the syntactic role of a word in a sentence), and semantic cues (meaning of word in a sentence). All these information interact together to assign meaning to a word, with meaning cues considered more critical (Daneman, 1991: 514).

2.1.2.2 Higher-Level Processes Affecting Reading Comprehension

Higher-level or text-level processes are required in assembling words, phrases, and sentences taking account of their semantic, syntactic, and referential relationships to construct the meaning of a print (Daneman, 1991: 513). They are also involved in relating the content of a text to readers' background knowledge (Pressley, 2000: 549).

2.1.2.2.1 Text-Level Processes Affecting Comprehension

In order to understand a passage, readers have to do more than just recognize and comprehend the individual words. They have also to assemble the successive words, phrases, and sentences to construct a meaningful representation of the whole text. Readers must go beyond the word level to extract meaning from sentences and more extended structures such as paragraphs and texts (Just and Carpenter, 1987; in Dechant, 1991: 12). These higher-level comprehension processes involve a number of component processes at the sentence and text levels.

At the text level, readers have to extract the underlying propositions which are considered as "functional units" in language comprehension; they are the smallest units of knowledge that can stand as separate assertion, and that can be expressed in words, even though not the written words themselves (McNamara, *et. al.*, 1991: 491- 492). For instance, the sentence "Regan gave a beautiful bible to Khomeini, who was the leader of Iran" contains three propositions:

1. Regan gave a bible to Khomeini.
2. The bible was beautiful.
3. Khomeini was the leader of Iran.

The text is conceived as a set of interwoven propositions. At this level, newly combined propositions are jointed to the previously linked ones so as to construct a general

representation of the selection. Integration of propositions is generally shown through the recurrence of an element in the different propositions such as a noun. The latter is substituted by its pronoun (anaphoric connection) to achieve sentence combination. Integration also accounts for making semantic relationships among successive propositions. If meaning integration is successfully achieved, the reader will be able to detect semantic inconsistencies between the various propositions as a source of error and, then, select an alternative meaning which is systematically compatible with a particular idea.

To understand a script, readers are required to do more than assembling and integrating the successively encountered propositions in a text. Some of the propositions on which readers rely to construct a whole representation of a passage are not explicitly mentioned, but they are semantically or logically implied. It is on the basis of their knowledge of the world that readers make inferences to grasp what has been implied (Daneman, *op.cit.*, 515).

Nonetheless, reading is neither a question of decoding and understanding individual words, nor a matter of assembling words, phrases, and sentences to construct the meaning of a written material; reading further necessitates the development of general concepts which are vital for text comprehension.

2.1.2.2.2 Automatic Relating of Text Content to Prior Knowledge

Throughout his life, the mature reader acquires a lot of knowledge and concepts about the world and stores them in his long-term memory. This retained information is represented in what cognitive scientists term "schemata". The latter are regarded as the building blocks of cognition (Rumelhart, 1980; in Kucer, 2005: 125) and excessively affect reading comprehension.

Simply defined, schemata are complex structures of information about the individual events. They include his knowledge of objects and situation as well as information about processes such as reading, washing...etc (Kucer, *ibid.*). Thus, a schema for a "ship christening", according to Pressley (2000: 549), includes that this event is about blessing a ship (the purpose) on a dry dock (where it is done) by a celebrity (by whom) just before launching a new ship (when it occurs). The christening action is also represented in this schema (breaking a bottle of champagne that is suspended from a rope). The importance of schemata, in fact, lies in its role in helping readers' understand what they read by associating what is in the text with the knowledge stored in their memories.

The influential role of background knowledge on reading comprehension is actually unveiled as early as children's beginning years. Bauer and Fivush (1992; in Pressley, 2000: 549) determine that even very young children develop schematic representations for repeated events in their lives such as having dinner at home or at a restaurant, celebrating birthdays, making cakes ...etc. Such knowledge enables them to draw inferences from bedtime stories relying on information accumulated in their schemata. Thus, the more abundant the knowledge a child acquires from outside world through experiences and from stories or television, the richer his schematic knowledge tends to be, and the more successful will be his processing of text when he reads. It should now be clear why it was noted earlier in (chapter 1, section 1-1.) that children must be proficient readers of experience before they can become efficient readers of graphic symbols. Actually, they cannot be good readers unless their past experiences have furnished them with a cognitive base relevant to information contained in a particular script. Henceforth, we read to gain experience; yet, it is also true that we get more out of reading if we have more experience.

2.1.2.3 Sources of Reading Comprehension Difficulties

Virtually, all the contributing elements in comprehension construction may become sources of its impairment (Cornoldi, *et. al.*, 1996: 140). Two components, considered by 'verbal efficiency theory' (Perfetti, 1985; in Sthothard and Hulme, 1996; 98) inescapable sources of comprehension difficulty, are the limited capacity of working memory (see chapter 1, section 1.3), and lexical processes limitation such as inefficient decoding processes and failure in accessing words' meaning. In this context, if readers do not recognize words rapidly enough, this will place heavy demands on short-term memory whose capacity is very limited and minimize the cognitive energy available for comprehension. Hence, even though the decoding of words is accurate, it tends to consume the cognitive processes necessary for comprehension because it is slow and effortful. Other causes of comprehension hindrance, for Cornoldi (*op.cit.*), involve readers' inability to make inferences (understand implied information) and their inefficiency in monitoring their comprehension; that is to say, as readers are unaware of their comprehension pitfalls, they are unable to follow the necessary steps to repair them. A last factor, contributing to understanding impediment, is the lack of domain knowledge which is considered as a "cardinal ingredient" in meaning construction. Since every text is content specific, it requires precise knowledge of its field such as psychology, biology, and history.

2.1.2.4 Developing Comprehension Ability through Instruction

Traditional views of reading comprehension conceive effective understanding as mastering a number of distinct skills such as finding the main idea, drawing inferences, and remembering details from a script. Some skills, according to these view, are deemed necessary for others; comprehending and recalling explicit knowledge in a text (literal comprehension), for instance, is regarded as a prerequisite for making inferences (Spear-Swerling *et al.*, 1996: 213).

An alternative approach, based on a very different conception of comprehension, however, stresses the strategic nature of skilled reading. This approach emphasizes the necessity of adopting comprehension curricula founded on the teaching of a set of basic strategies applicable to a variety of texts. Instances of these strategies are summarizing, generating questions, and applying fix-up strategies to overcome comprehension difficulties. This approach contends that inferential comprehension should be emphasized right from the beginning of reading instruction (Spear-Swerling, *ibid.*).

As strategic reading is encouraged for sustaining readers' comprehension; then, what strategies should be taught? Comprehension strategies are "specific cognitive procedures that guide readers to become aware of how well they are comprehending as they attempt to read or write" (NRP, 2000: 4-5). In its review of more than 200 studies, the National Reading Panel (2000) concludes that amid the sixteen categories of strategy instruction surveyed, eight appeared to have a firm scientific ground "for concluding that they improve comprehension in normal readers" (NRP, *ibid.*, 4.42). These strategies are: comprehension monitoring, cooperative learning, graphic and semantic organizers, story structures, question answering, question generation, summarization, and multiple strategy (NRP, *ibid.*, 4-6).

(a) Comprehension Monitoring

This strategy is intended to develop metacognitive abilities in readers; that is, to help them think about their own comprehension processes. It involves teaching the learners certain strategies that enable them to be aware of their understanding when they read, to know when they understand, what they do not understand, and to take steps to overcome their comprehension difficulties. (NRP, *ibid.*, 4-70).

(b) Cooperative Learning

Cooperative learning involves learners to work together on strategies and to be engaged in intellectual discussions to sustain their reading comprehension (NRP, *ibid.*, 4-72).

(c) Using Graphic and Semantic Organizers and Recognizing Story Structures

Graphic organizers are diagrams or charts that are drawn to represent the relationship of ideas and information in a print. Different texts take different structures; history texts, for instance, present events in chronological order, an article may be organized around a main thesis whereby supporting details are matched to make a persuasive argument, and a story, on the other hand, is organized around a series of events. Recognizing a story structure or the way its events are organized into a plot enables the readers to become aware of the important story elements (setting, characters, events, goals ...etc) and facilitates their understanding and recall. Graphic organizers, thus, help readers be familiar with different text structures and hence enable them to grasp the flow of information within a particular selection (NRP, *ibid.*, 4-73, 4-91).

(d) Question Answering

Question answering strategy involves showing the learners how to find and use information from a text to answer teacher's questions in order to get more from their reading (NRP, *ibid.*, 4-86).

(e) Question Generation

Question generation involves learners' asking and answering of questions about their reading. This improves their understanding and retention (NRP, *ibid.*, 4-89).

Activating and using background knowledge is often used as part of question answering and question generating strategies. Prior knowledge activation implies the elicitation of students pre-existing knowledge of the world that they can use to understand what they

read. This may be achieved through pre-reading activities which are conceived as a "bridge between readers knowledge base and the text"; they are viewed as "a preparatory step in which purpose setting and concept development are primary goals" (Tierney and Cunningham, 2002: 609). One way to fulfil this aim is to ask students to predict text content relying on their prior knowledge, often in response to pre-reading questions about the text (NRP, *ibid.*, 4-83, 4-84).

(f) Summarization

Summarization requires from the learner to recognize the important ideas of a text (NRP, *ibid.*, 4.93). This strategy helps learners to know about the organization of a text, to identify its main ideas and to connect them together.

(g) - Multiple Strategy Instruction

Multiple strategy instruction entails the use of two or more strategies involved in a teacher-learners interaction, usually in small groups (NRP, *ibid.*, 4-77). Readers have to be flexible in choosing among the wide range of strategies according to text demands.

Although reading strategies are powerful tools for readers, Harris and Pressley (1991; in Spear-Swerling, 1996: 216) point out that strategy instruction is not a 'cure all'. They are just one instrument to assist students in reading comprehension. There is clearly more to skilled reading comprehension than knowing and using strategies. According to Pressley (2000: 551-553), teaching decoding skills, developing sight words (reading through chunks), vocabulary instruction, and encouraging extensive reading are also important to effective reading comprehension. This was clearly stated by Kamhi (2005: 201):

"I argue that the best way to improve comprehension is by explicitly teaching vocabulary, background knowledge, and the flexible use of specific strategies".

Kamhi (2005: 201)

2.1.2.5 Assessing Reading Comprehension

Evaluating reading comprehension is undoubtedly not easy to achieve, for reading comprehension assessment may denote testing many levels of understanding. The latter range from testing trivial information directly stated in a printed text to high-level thinking evaluation. According to Kamhi (2005, 205):

Understanding is clearly not something that simply occurs or does not occur, like turning a light switch on or off. Comprehension is more like continuum with literal, shallow understandings at one end and creative, deeper understanding at the other [...] because it has many different levels ranging from literal interpretation to analytic, creative and comparative ones [...] it is this aspect of comprehension that makes it difficult to assess.

Kamhi (*ibid.*, 204 -205)

Reading can be assessed by means of different procedures; none of which, however, can be designated as 'the best' method or most suitable one. This is so because no procedure is able to encompass all testing purposes (Alderson, 2000: 203). According to the IELTS Handbook 1999; in Alderson (*ibid.*, 205-206), amidst the wide range of question typologies, testers can use to measure learners' reading: multiple choice questions (MCQ), short-answer questions, sentence completion, completing summaries and tables, identifying writer's views and attitudes by 'yes' or 'no' questions, matching lists, and matching phrases. Nonetheless, precedence is given to a number of testing methods, namely the close procedure and multiple choice questions because they are commonly used and known for "convenience and efficiency". The following is a brief discussion of what each assessment method entails according to Alderson (2000).

(a) Multiple Choice Questions (MCQ)

MCQ technique with four alternatives is the most spread way to test reading. It is widely used in reading textbooks. Munby (1968: xii-xiii; in Alderson, 2000: 204) states

that it is possible to utilize the MCQ technique in a way to stimulate learners thinking. That is to say, when the four options or 'distractors' are not clearly distinct from one another, learners are obliged to show a certain sensibility to select the right alternative. Respondents' wrong choices can be due to their thinking abilities, language abilities or both. MCQ is a well known procedure for assessing readers' text processing abilities. In spite of the fact that it is a wide spread technique, MCQ has been criticized by many researchers. Some of them view responding to MCQ and text comprehension as completely too independent abilities. To answer MCQ, students can only make recourse to their past experience, knowledge and logical thinking, for example, to reach the right answer by the deletion of remote options. Others maintain that the options provided can draw learners' attention to probable responses they could not find out for themselves (Alderson, *ibid.*, 211).

(b) The Cloze Test and Gap Filling Tests

The cloze procedure was widely used during the 1970's as an assessment tool of both language and reading abilities (Alderson, *ibid.*, 205). The benefit of such a procedure lies in the easiness one experiences to assign and grade cloze tests. Confusion between these two assessment tools (the close test and filling the gap test) is often made by many testers. Alderson (*ibid.*, 208) insists on the importance of clarifying the difference between them. To design either a cloze or a gap filling test, testers go through the following same steps:

1. Choosing a given reading selection.
2. Leaving the first and last two sentences as they are to assist readers' understanding of the passage.

3. Removing a number of words from the rest of the text, and in this way, creating blanks. Testees, later on, fill in these gaps with suitable vocabulary items not necessarily the original ones so that the text makes sense again.

The difference, however, lies in the criterion the words to be left out are selected. In cloze tests, no specific rationale is followed except for the words' original position. That is to say, every 5th, 6th, 8th, 9th, 10th, 11th, or 12th word is omitted regardless of its function in the sentence. In gap filling, on the other hand, importance is awarded to the grammatical and semantic roles the deleted items play. This implies that in gap filling tests, the tester is in control of what is being assessed (meaning or syntax) but not in cloze tests. An alternative to these tests would include providing testees with options from which they can choose the most appropriate ones. These choices appear in each gap or at the end of the whole text or passage. "The blanked cloze" is how such variant is referred to.

(c) Matching Techniques

Learners, in this type of tests, are required to match a number of items that combines well with some others; for instance, to link titles or main ideas with their relevant paragraphs. Similarly to MCQ, candidates are supplied with different items to select from. Specifically, more items than needed for the matching activity to make sure that learners' choices are made after attentive processing (Alderson, *ibid.*, 215, 219)

(d) Ordering Tasks

This assessing tool consists of rearranging jumbled words, sentences, paragraphs or texts to get, respectively, coherent sentences, paragraphs, texts or chapters. (Alderson, *ibid.*, 219). Ordering tasks is one of the hardest tests to design and build because, sometimes, more than one order is possible and the tester is surprised by an unexpected answer.

(e) Dichotomous Items (True/False Questions)

This is an easy test to construct. It involves students in selecting one item out of two to provide answers to questions. The latter take the form of statements to be compared with text content. Learners have to state if each statement is true or false, agrees or disagrees with the author's idea. This method is criticized for its high probability of providing right answers only by "guessing" at them (Alderson, *ibid.*, 222).

(f) Short Answer Test

As the label suggests, this technique uses "wh" questions to elicit information from readers. The latter reformulate their answers briefly or shortly in their own words. This technique allows for the interpretation of how well readers have comprehended script better than MCQ do. The difficulty designers experience when constructing short-answer tests lies in the wording of questions via which they should anticipate all alternative responses so that not to be surprised by unexpected ones. The best way to do this is surely to pilot them before the actual use (Alderson, *ibid.*, 227).

(g) The Free-Recall Test

The free recall test is also labeled "immediate-recall tests" or "an extended production response type" by Bachman and Palmer (1996). Students are given a text they have to read; then it is retrieved aside, and they put in writing as much information as they remember from text content. Worth mentioning, the language used in recalls is the test takers first language. This assessment tool is acknowledged to be not only appropriate for testing comprehension alone but also for uncovering students' information processing, restoring, organizing, retrieving and reorganizing strategies. The most practical way to score recalls is based on the number of ideas recalled from the original version of the text. (Alderson, *ibid.*, 230).

(h) The Summary Test

The summary test is a variant of the abovementioned free-recall test. After reading a selection, candidates are required to sum up the main ideas as they appear in the passage, a segment of it or solely the ideas or concepts relevant to a specific subject matter. Summarizing reflects learners' level of text understanding. To summarize a passage, they need to distinguish central concepts from trivial ones and to reformulate the content of the text in their own way.

One difficulty makers of summaries fall in is how to avoid subjectivity as agreeing on which ideas are important and which ones are less important. To handle this problem, the text should be written in a way where some concepts are apparently more central to the topic of the text than others are. Another problem is that summarization can be a writing activity too. Thus, learners are permitted to use their mother language to procedure their summaries (*ibid.* 232-233,236).

(i) The Gapped Summary

This technique comes to lessen the criticism to summary tests. Here, learners are asked to fill in blanks of a summary of a text they have just read. The blanks replace 'Key words' that test-takers have 'to restore'. Grading such tests becomes an easy task compared with other testing methods like: summarization and short-answer questions (Alderson, *ibid.* 240-242).

(j) Information Transfer Techniques

This is, to some extent, a popular assessment tool. Learners read 'verbal' or 'graphic texts' taking the form of diagrams, charts, tables...and the like, search for a specific bit of information and to transpose it to another graphic form (a map, a bar graph ...etc) (Alderson, *ibid.*, 242-248).

Virtually, none of the aforementioned tools of assessment can be considered as the best way to diagnose learners' understanding. Alderson (*ibid.*, 206) conceives checking learners' processing of diverse text elements via a unique method as inappropriate. Furthermore, using two or more techniques in combination is characteristic of "good reading tests". Thus, combining a number of testing procedures is probably going to be more and more utilized in the coming years.

2.2 Section Two: Reading Speed

Reading speed, being a major factor in skilled reading and a source of comprehension impediment, is thoroughly examined in the second section. After defining reading speed and emphasizing its significance for EFL student, "Automaticity Theory" being the theoretical support for reading speed is provided. The section also presents diverse activities to enhance students reading rate and closes with some faulty reading habits readers have to get rid of.

2.2.1 Definition of Reading Speed

Reading speed constitutes, in combination with reading comprehension, the two crucial components of skilled reading (Fraser, 2004: 137). Its significance lies in its role in determining the extent of readers' fluency. If 'reading fluency' is defined, according to Fraser (*ibid.*, 137), as "the ability to read a text rapidly, smoothly, effortlessly and automatically with little attention to mechanics of reading such as decoding", 'reading speed' is estimated as being "an accurate measure of reading fluency" (Fraser, *ibid.*). It is used, according to Carver (2000: 78) to evaluate readers' quickness in covering the words during reading and is recorded in words per minute.

Dechant and Smith (1961: 222), however, state that an adequate definition of reading speed should entail reading rate in association with comprehension because reading speed

is meaningless without understanding what is being read. They elaborate on their argument stating that readers cannot read quicker than they could understand; however, a great number of readers show excessive slowness than their comprehension allows. Therefore, reading speed has to be used to denote the rate at which readers understand a print. Being defined as "the ability to decode so many words per minute", reading rate is used, according to Eskey (2005: 568), to describe the process of reading in meaningful groups of words labelled "chunks". Being in the same thread of thought, Nelson (1948: 100) conceives reading speed as "the capacity with which meanings are accurately grasped". According to him, speed at which one understands meaning correctly is very essential since it represents an important measure of a reader's reading competence. He states that among the difficulties students encounter is the inability to read quickly. If students manage to read rapidly without a concurrent drop in comprehension, their reading efficiency greatly improves (Nelson, *ibid.*).

2.2.2 The Importance of Reading Speed in EFL

One of the difficulties encountered by EFL students is slow reading. This problem tends to cause their embarrassment. Hayland (1990: 4), in his depiction of EFL students' reading, notes that the habit of slow reading changes their reading into a hard unpleasant experience, where students plough through a word-for-word reading of texts from beginning to end stumbling at every unknown word. This, in fact, causes them to fall behind with their reading assignments and to fail to appreciate the act of reading.

Hayland (*ibid.*) adds that slow reading is the product of classroom methodology in reading lessons. Texts designed for reading are generally used as vehicles for the presentation and practice of language items such as vocabulary and sentence structures rather than the encouragement of reading itself (Nuttall, 1982: 19). This emphasis on

linguistic patterns encourages students to develop a word-by-word reading habit, thinking of it as the most convenient way to achieve a total comprehension of texts. This, in fact, leads students to feel insecure about skipping over words and shakes their confidence to be flexible readers (Hayland, *op.cit.*, 14).

Many factors are said, according to Fraser (*op. cit.*, 146-147), to sustain EFL students' slow reading. First, the lack of extensive exposure to the foreign language; Unlike L1 adult readers whose reading automaticity (being able to see the words and read them quickly without decoding them letter-by-letter and finding their meaning immediately) tends to progress spontaneously as a result of a vast exposure to the L1, EFL students are faced with difficulties due to their limited reading experience with the FL. This actually affects their reading automaticity as well as their reading comprehension (Grabe, 1991; in Nubucco, 2006: 70). Second, the vast number of unfamiliar words students come across. Third, non automatic word recognition; in other words, disfluent word decoding. Fourth, un-efficient syntactic parsing; that is to say, inadequacy in grouping words into meaningful chunks. Another crucial factor that proves to be very influential in EFL students reading fluency lacuna is the structural differences between the writing systems. If we take the example of Spanish and Arabic students of ESL/EFL, the Spanish students tend to read English faster than the Arabic ones although both of the Spanish and Arabic languages use alphabetic scripts. This is due the fact that the Spanish language is closer to the English one in its use of Roman alphabet (Handerson, 1983; in Fraser, 2004: 147).

Cohen (1979; in Devine 1988: 264) finds out that ESL readers tend to spend six times longer than natives to read a text. This reading slowness stems primarily from a word-by-word deciphering which overloads their short term memory and intervenes with their reading comprehension (Eskey and Grabe, 1988: 233). Although EFL students contrive to

comprehend a text, deficiency in fluent decoding shifts their reading into a hard effort-wasting task.

Reading fluency has been indicated as a good mystery. To understand the significant role fluency plays in reading instruction, teachers should be 'good detectives' to find its clues. One of the uncovered keys to reading fluency is reading rate (Meribeth, 2000: 534). Reading speed has been demonstrated as a cardinal variable in reading performance. Eskey (1970; in Carrell, 1988: 1) stressed that reading rate should not be overlooked; as students reach advanced levels of proficiency, they have to be able to read at a moderate rate and demonstrate a good comprehension as well. Unfortunately, reading speed has formerly been ignored by both researchers and teachers.

Carver (2000: x) asserts that reading rate has been ignored by both researchers and teachers. It is rarely measured either to assess reading development or to identify its problems. He asserts that the rate at which individuals read with accurate comprehension is a "major factor" which extremely influences readers' achievement (Carver, *ibid.*).

It has been pointed out that reading teachers tend to give more emphasis to word recognition, vocabulary, and comprehension improvement at the expense of fluency development. For them fluency is considered as a by product of the aforementioned goals rather than a contributing factor in itself (Zutell and Rasinski, 1991; in Meribeth, 2000: 535). This gives ground for the reason why fluency is very restrictively introduced - if not at all - in the currently used reading textbooks (*ibid.*).

Rasinsky (2000: 146) was faced with the comment that reading speed is not very significant as long as the students are able to extract meaning from the written material, or as they are able to understand what is being read. Although he strongly agrees that understanding is the end-product of reading, he stresses the fact that reading rate should

not be ignored neither as an indicator of fluent reading nor as an evidence of excessively slow processing of a text

According to Fraser (2004:135), slow effortful reading hinders L2 / FL learners to achieve an effective and efficient comprehension of what they read and hampers them from dealing with the required amount of reading. Hence, for her, improving reading fluency for L2 / FL learners is a major goal for educators. Being in complete accordance with her, Rasinski (*op. cit.*,) states:

... the point I am hoping to make is that we need to take the notion of slow, inefficient disfluent reading seriously. Even with adequate comprehension, slow and laboured reading will turn any school or recreational reading assignment into a marathon of frustration for nearly any student.

(Rasinsky, 2000: 146)

He considers reading rate as an indicator of fluent and disfluent reading and, a tool for assessing students' reading performance. It is according to reading rate that authentic instructional activities can be included into a reading programme.

Nuttall (1982: 167), on her part, depicts the frustration caused by slower reading in her description of "the vicious cycle of the weak reader". Readers who do not comprehend tend to slow down their reading speeds; in doing so, they lose interest in what they read because they spend much time. As a result, they do not read much and will not improve their reading rates. Nuttall states that by increasing reading speed, readers are invited to the "virtuous cycle of the good reader". If students are able to read quickly, they will enjoy reading. With reading practice their comprehension improves.

From the above discussion, it is proved that reading speed is very important for efficient reading; therefore, it needs to be taken seriously by both teachers and curricula designers.

2.2.3 Automaticity Theory: The Theoretical Background of the Study

The current study is founded on LaBerge and Samuels "Automaticity Theory" (1974). Before we deal in depth with LaBerge and Samuels' model of automatic information processing, the notion of automaticity is clarified. In this vein, automaticity in learning new skills in everyday life is tackled before it is specifically related to reading.

2.2.3.1 Automaticity : The Route to Competence

If someone asks about the route of being professional at any sport or being expert at playing a musical instrument, the answer would be the way to skillfulness is practice. This conception, in fact, is not a new one; it is as old as William James' (1890) *Principles of Psychology*. According to him, unless a task's repetition frees the performer's mind from directing attention to its completion, life would be restricted to very few deeds, and progress would never come about (James, 1890: 37; in Samuels, 1999: 179). The same notion is put forward in Huey's classic book (1968) *The Psychology and Pedagogy in Reading*, which was very influential in the advance of cognitive psychology. Huey contends:

Perceiving being an act, it is like all other things that we do, performed more easily with each repetition of the act. To perceive an entirely new word or other combination of strokes requires considerable time, close attention, and is likely to be imperfectly done, just as when we attempt some new combination of movements, some new trick in the gymnasium or new serve at tennis. In either easy repetition progressively frees the mind from attention to details, makes facile the total act, shortens the time, and reduces the extent to which consciousness must concern itself with the process.

(Huey, 1968: 104).

According to Huey, the performance of any new skill tends to be slow, effortful, and time-consuming because every detail and each step in its execution requires a great deal of conscious attention. Once it is performed over and over again, the achiever gradually gains proficiency over it and succeeds in fulfilling it rapidly, effortlessly, and unconsciously.

Hence, For Huey, it is the repetition of any process that facilitates a task's termination, shortens its duration, and allows its accomplishment without a close attention. This principle of mastering a new skill also applies for becoming good readers.

An example of gaining automaticity over a task in everyday life would be of a great help. A case, provided by Samuels' (1999: 138), is driving a car which is a complex process that entails many operations to be carried out correctly, rapidly and instantly. In addition to the attention the driver would pay to monitor the traffic, he would be alert to stoplights, road signs, and pedestrians. He might also be engaged in a conversation or listening to music. Beginner drivers have to think about every procedure before carrying it out such as "now the key, now the clutch, release the clutch and more gas". With practice they become automatic so that all these tasks would be performed unconsciously. In this regard, Posner and Synder (1975; in Samuels, 1999: 182) state: "automatic performance usually occurs without intention or awareness, and since it occurs unconsciously, it is difficult to suppress or modify".

For Samuels (*op. cit.*,183), this automaticity principle covers all the complex processes such as reading a print, writing a script, reading music and playing it simultaneously. All these activities comprise sub-processes which might be performed instantly and unconsciously only after they become automatic.

2.2.3.2 LaBerge and Samuels Automaticity Theory: Automaticity in Reading.

The Theoretical rationale for the current study stems from LaBerge and Samuels' (1974) model of automatic information processing in reading which is rooted in Huey's classic work (1908,1968), *The Psychology and Pedagogy in Reading*. LaBerge and Samuels (1974: 293) emphasize the importance of automaticity in reading relying on the argument of the limited capacity of attention in human beings. They contend:

During the execution of a complex skill, it is necessary to coordinate many component processes within a very short period of time. If each component process requires attention, performance of the complex skill will be impossible, because the capacity of attention will be exceeded. But if enough of the component and their coordinations can be processed automatically, then the loads on attention will be within tolerable limits and the skill can be successfully performed. Therefore, one of the prime issues in the study of a complex skill such as reading is to determine the processing of component sub skills becomes automatic

(LaBerge and Samuels, 1974: 293).

As it has been articulated by LaBerge and Samuels, attention refers to the mental energy used by a person to process incoming information. This cognitive effort is a limited capacity; if a person manages to minimize its amount to carry out a task, more attention would be available to be devoted to a concurrent performance. They proposed that once an operation becomes automatic, attention demands are reduced to a minimum. Thus, the more automatic the processing at earlier levels, the more attention capacity is left for complex levels of processing.

Automaticity principle is relevant to complex processes such as those involved in reading. To shed light on the intricate nature of reading, considering the stages through which readers proceed to become automatic readers would be of paramount importance. Samuels (1999: 180) advances that the reading act entails two basic processes: The first process involves decoding, where readers see and pronounce the words either silently or loudly, and the second process entails comprehension. In order to understand what has been deciphered, readers must access words' meanings (match words' definitions with descriptions held in readers' mental dictionary by relating the printed information to their own background knowledge). Both decoding and comprehension require paying attention.

In order to become automatic readers, students progress through two main stages as characterized by Sternberg *et.al.*, (1999: 178): a beginning 'controlled' stage and a final automatic stage. In the first phase, beginner readers spend much time and effort to decode the words. This process is performed at a conscious level and demands considerable attention and effort. At the automatic phase, however, word recognition (refers to linking the printed representation of a word to its meaning) becomes mechanical, attention free and hence carried out rapidly, accurately, and effortlessly.

In this regard, and in line with the definition of automaticity – the ability to execute a complex process with little attention- Samuels conceives that practice in reading (extensive reading) enables the reader to decode with minimal attention and save the available cognitive resources for comprehension processes. In like manner, automatic students may feel the easiness of reading since they do not load their short-term memory and what is stored there is meaningful to them (Samuels, *ibid.*, 182).

2.2.3.3 LaBerge and Samuels Model of Automatic Information Processing

The LaBerge and Samuels model of automatic information processing embodies five main components: attention, visual memory, phonological memory, semantic memory, and episodic memory.

(a) Attention

Attention is the cardinal element in LaBerge and Samuels' (1974) model of automatic information processing. It refers to the limited cognitive energy a person uses to process information. In order to comprehend how attention is used, considering how it is used by both beginning and mature readers is worth noting.

As it has been suggested by Samuels and Kamil (2002: 197), the decoding process is hard for beginning readers who must first learn to distinguish and remember visual features

of letters, and then comprehend what has been deciphered. The joint effort of decoding and comprehension may surmount the attention capacity of the beginner students and inhibits the two processes (decoding and comprehension) from co-occurring simultaneously. To compensate for this hindrance, students apply the attention switching strategy. They first direct their attention to decoding; once the decoding task is fulfilled, attention shifts to comprehension processes. Although comprehension switching permits students to comprehend, it tends to consume too much time. In addition, it causes short-term memory to be overloaded, and this prevents them from recalling what they have read (Samuels and Kamil, *ibid.*).

In contrast to beginning non-automatic readers who adopt attention switching strategy that allows them to either decipher or comprehend at once, mature automatic readers can do both decoding and understanding simultaneously. Since their decoding task is very automatic, very little attention is allocated to it so that all the available attention is allowed for comprehension processes.

(b) Visual Memory

It is at the visual memory that the visual stimuli from the printed page are processed. Units in the visual memory take different sizes. They could be a distinctive feature, a letter, a spelling pattern, or a word. At a very early stage of reading, before they become familiar with language letters, readers start by noting their distinctive features. Gradually these distinctive features would be unitized into a letter code. With sufficient practice, certain letter combination would not be processed as separate letters but as a single visual unit (single spelling patterns). These spelling patterns, in their turn, are further combined so that the word itself is processed as a single visual word unit (Samuels and Kamil, *ibid.*, 198-199).

(c) Phonological Memory

Similar to the visual memory, which includes units of increasing size from the distinctive feature up to the word, the phonological memory entails distinctive features, phonemes, syllables and morphemes. Phonological memory utility lies in its function as a mediator between the visual and the semantic memory; In other words, before proceeding to the semantic memory for meaning processing, letters, spelling patterns, and words selected from the visual memory return to the phonological memory to meet their counterpart letter sounds, syllables, and morphemes, for a reader may break a word down into parts and sounds them out before he recognizes the word meaning (Samuels and Kamil, *ibid.*, 204).

(d) Episodic Memory

Events related to people, objects and time are stored in the episodic memory. Information in this memory consists of answers to "wh questions": When for time, where for location, who for people and what for objects (Samuels and Kamil, *ibid.*).

(e) Semantic Memory

The final element addressed in LaBerge and Samuels (1974) model, according to Samuels and Kamil (2002: 205), is the semantic memory. It is where our general knowledge about the world is stored. In reading, unless the printed information fits adequately with a reader's general knowledge, his comprehension would be hampered. Accordingly, understanding of written materials is facilitated by the various types of experiential knowledge stored in the semantic memory.

Decoding speed is a key element in Samuels and LaBerge model. According to this model, a reader is required to be able to decode words rapidly and efficiently before being able to fully develop the more complex skills of reading. As decoding becomes more

automatic, more attention is available for comprehension; with greater mental resources devoted to it, comprehension improves.

2.2.4 Automatic Word Recognition

Word recognition has undeniably been of paramount significance in the reading process. Not only is it considered as the basis of reading (Gough, 1984; in Stanovich, 1991: 418), it is further estimated to be 'the crux' of reading. Automatic word recognition operations are tightly related to higher levels of reading comprehension (Stanovich, *et al.*, 1996: 15). Despite the fact that both top-down processes (such as prediction) and bottom-up processes (such as word recognition) are necessary for comprehension, the latter relies greatly on rapid and accurate decoding (Birch, 2002; in Eskey, 2005: 566). Word recognition is also cited amid the three fundamental reading skills; namely comprehension skills, rate skills and, word recognition skills (Dechant and Smith 1961: 185). Word recognition would be repeated throughout our discussion, thus, it would be better to explain it for clarity.

Word recognition is the process of seeing a word and accessing its meaning. Automatic word recognition entails phonological recoding and lexical access. Phonological recoding consists of matching the printed letters to their corresponding sounds relying on letter-sound rules. For instance, the word 'man' would be translated into its component letters (m, a, n), then into their corresponding sounds (/m/, /a/, /n/) before being matched to form the word man. Lexical access, however, consists of finding the word's meaning in the reader's mental dictionary (lexicon) (Chard, *et. al.*, 1998: 144). Ehri and Walice (1983; in Carver 2000: 67) contend that automatic word recognition proceeds through three main phases:

1. Accuracy: It involves recognition of unfamiliar words by focusing attention on the component letters of words trying to decode the words accurately.

2. Automaticity: with experience readers are able to recognize familiar words automatically as whole units.
3. Speed: the speed of processing familiar words increases to a maximum.

Grabe and Stoller (2002: 20; in Crawford, 2005: 36) stress the centrality of rapid automatic word recognition for fluent reading comprehension. Considering word recognition as a car's gasoline and the car as reading comprehension; they contend that just as a car could not run without gasoline, reading comprehension could not take place without fluent word recognition.

In this respect, Stanovich (1991: 443) states that the utility of fluent word recognition lies in the fact that it provides the working memory with accurately recognized words which facilitates text comprehension. Being in the same line, Nobuko (2006: 70) notes that FL students are deficient in word recognition skills, and this causes them to spend more attention to decoding which intervenes with their understanding. It is certainly no surprise that if word recognition becomes faster and automatic, a progress towards increased reading comprehension is attained.

2.2.5 Suggested Activities to Enhance EFL Students' Reading Speed

Increasing reading speed is a very important issue for EFL students who devote an inordinate amount of time and energy when they read and struggle to complete lengthy reading assignments. This difficulty, however, is not a kiss of death; training may enable them to enhance their reading speed. Furthermore, if students manage to read faster, they will be motivated to read more. The following four activities, according to Anderson (1999: 3-4) might be worth trying:

(1) Rate-Building Reading

Students are assigned a printed text and are asked to read as much material as they can in 60 seconds period of time. They then start reading again from the beginning of the text and are given an additional sixty seconds. They are to read more material during the second sixty second period than in the first. The activity is repeated a third and fourth time. The purpose of this drill is to reread 'old' material quickly moving smoothly into the new. As their eyes move quickly over the 'old' material, students actually learn to read faster. This activity is not intended to move the eyes quickly; it aims, however, at joining the twin goals: quick reading and efficient understanding.

(2) Repeated Reading

This activity involves the students to read a short passage over and over again until they achieve criterion levels of reading rate and comprehension. For instance they may try to read a short 100 word paragraph four times in two minutes. Criterion levels may vary from class to class. A reasonable criterion would be to achieve a speed of 200w/m and 70% comprehension.

(3) Class-Paced Reading

Anderson (1999: 3) states: "The class-paced reading activity allows the class to set a goal for a minimal reading rate". In other words, the class establishes a push speed or pacing speed which is beyond or above their normal reading speed. In paced-reading exercises, the teacher controls the time allowed for the readings (Champeau de Lopez, 1993: 1). Concerning the passages to be read, a mark is placed in the margin of the text next to the line containing each 100th word. The teacher then tells the students, with a tap on the desk, to move to the next mark, according to the speed the teacher is pacing. For

instance, if students are pacing at 150 words per minute, the tap would be every 45 seconds to read 100 words.

(4) Self Paced Reading

Like class-paced reading where the teacher establishes the speed goal to pace for, self-paced reading allows students to read at a specified pace they determine on their own. In this vein, students establish their own objective speed (eg 180 w/m) and according to it, they determine the amount of material to be read in one minute to meet their speed goal. These activities do not require specially developed texts; they can be implemented by teachers using class texts.

In addition to the four aforementioned activities, Nuttall (1982: 40) provides skimming and scanning as being activities to enhance reading speed:

Skimming: According to Baudoin *et al.* (1994: 22), "To skim is to read quickly in order to get a general idea of a passage". Skimming does not require reading every word or sentence but only selected parts of the passage in order to get the gist or the main idea of it. When they skim, students should pay attention to italicized or underlined words, headlines or subtitles, spacing, paragraphing...etc.

Scanning: Baudoin, *et. al.*, (*ibid.*) defines scanning as "to read quickly in order to locate specific information". They identify four steps involved in this strategy: (a) deciding exactly what information we are looking for and the form it would take (it would be a name, a date...etc), (b) deciding where we would find this information, (c) moving our eyes quickly over the page to locate it, (d) whenever the information is found, we read it carefully and we stop reading.

Additional Activities

Students can practice a variety of other activities such as word recognition tasks.

Word Recognition Activities: They generally involve a set of key words or phrases on the left-hand side of a page, each one followed by a row of four or five words one of which is identical to the key word, whereas the others are similar in shape or morphological variations to the key word (see figure below). Students are asked to work as quickly as possible to mark the exact match for each key word.

| | |
|--------------------|---|
| fluent | fluid flaunt flute flutter fluent |
| reading | reeling raising rising reading reaping |
| requires | require requests requisite requires requiem |
| efficient | efficient effective effigy efficacious effectuate |
| word | ward word world work wordy |
| recognition | recognize recognizance recognition recognizable recondition |

Extracted from (Crawford, 2005: 37)

From rapid word recognition, teachers move students into rapid phrase-recognition activities. In this type of activity, students are looking for 'key phrase' in a group of phrases (see example below)

(a) Key phrase: *lazy day*

Crazy day
Hazy day
Cloudy day
Lazy day
Windy day
Nasty day
Lazy day

(b) Key phrase: *on the floor*

On the book in the flood
On the bay in the blood
On the door on the floor
In the door on the door
On the floor on the flower
In the lore in the flour
In the flood on the floor

Extracted from (Eskey and Grabe, 1988: 234)

This activity should be done under time pressure.

2.2.6 Criteria of Texts used to Develop Reading Rate

Nuttall (1982) highlights three criteria in evaluating reading texts:

- **Readability:** It refers to the linguistic difficulty of a given text. passages should fit the level of the learners. In this respect, the teacher should consider the structural difficulty as well as the amount of vocabulary met in the text (Nuttall, *ibid.*,25).
- **Suitability of content:** The content of a script should answer learners' interest and stimulate their motivation to read it (Nuttall, *ibid.*,29).
- **Exploitability:** The reading selection should be used to develop the learners' competence as readers. The teacher takes into account the purpose of the reading lesson and the reading skills to be developed (Nuttall, *ibid.*, 30-31).

2.2.7 Measuring Reading Speed

A student's reading rate is calculated by dividing the number of words in a text by the total amount of reading time. It is recorded in words per minute (w/m) (Nuttall, *ibid.*, 36; Champeau de Lopez, 1993: 50; Comon and Heavers, 1998: 82).

2.2.8 Faulty Reading Habits that Reduce Reading Speed

Students must rid themselves of several common reading habits which tend to reduce their reading rate. Let us have a look at some of the more prominent ones.

(a) Vocalization: It means pronouncing the words to oneself when he reads. Reading aloud is much slower than silent reading (because our eyes move faster than our tongue), and vocalization takes almost as long as reading aloud. When readers vocalize, they tend to read word by word instead of reading through chunks. This habit is easily eliminated through conscious effort. Otherwise, asking students to put a pencil in their mouths as they

read will solve the problem. (This will inhibit the physical action of the lips) (Cramer, 1998: 9).

(b) Pointing: Another habit that is criticized is pointing at words with a finger, a pencil, or a ruler to concentrate on the words when reading. This process slows students' speed down into a word-by-word reading. For Badrawi (1992; 19), although fingers can be used to read faster over a page, it is a common habit in FL mainly when L2 writing system is different from L1. Encouraging students to fold their hands helps them to get rid of this habit.

(c) Regressive Eye Movements: Another criticized habit is regressive eye movement; that is to say, moving the eyes back to check previous words instead of sweeping steadily forward. This slows reading down. Eventhough making regression is a sign of active reading where readers go back to check their predictions or to confirm their understanding of a text, excessive regressions lead to a very slow reading (Badrawi, *ibid.*, 19).

Conclusion

Reading comprehension is not as easy as common people may conceive. It is not as simple as getting information from a script. Actually, reading comprehension is a chain of processes. Each process is a ring in the comprehension chain with word-level rings tightly fastened to textual and background knowledge rings. Readers rely on letters and words to decode the written material. Furthermore, they also depend on text propositions integration on the light of their background knowledge to construct a meaningful representation of the text. Thus, the more fluent the word-level processes are, the less efforts readers tend to spend to understand what they read. Hence, unless word-level processes are easily and adequately performed, readers' comprehension tends to be impaired.

CHAPTER THREE: FIELD WORK RESEARCH METHODOLOGY AND TOOLS

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CHAPTER THREE: FIELD WORK

RESEARCH METHODOLOGY AND TOOLS

Introduction

The present study is designed to investigate the nature and strength of the relationship that exists between students' reading speed and their reading comprehension as they read a print written in English as a foreign language. Furthermore, it is intended to explore whether including paced-reading exercises in a reading course would have some beneficial effects on both reading speed and reading comprehension.

The present chapter offers the different measures adopted in data collection. It opens with a brief account on the position of reading speed and reading comprehension in ESL/EFL field of research which paves the way to three consecutive sections; namely research methodology, materials used in the study, and treatment phases. The first section entails research questions and hypothesis, research design, and the population and sample of the study. The second one presents a massive description of the materials used during the experiment and the measures applied for their selection and implementation. These materials are timed-reading tasks, paced-reading tasks, the treatment passages, and comprehension tests. The final section provides a detailed description of the treatment phases which consist of the pretest, the treatment period, and the posttest.

3.1 Reading Speed and Comprehension Position in EFL Research

The debate over the actual relationship which exists between reading speed and reading comprehension has perpetuated for more than half a century. Indeed, the answer to the question about the extent to which these two variables are correlated, and whether they are cause and effect or totally independent is not concerned in itself. Yet, it seems obvious that

involving exercises that enhance reading speed in an ESL/EFL reading course may have some advantages on reading speed and comprehension (Champeau de Lopez, 1993: 1). Within this scope, Nuttall (1982: 33) asserts the tight connection between these two elements -reading speed and comprehension. She notes that the slower one reads, the poorer his understanding tends to be.

Empirical research carried out by Coady and Anderson (1993) provides some conclusions about the importance of including rapid reading programmes and the possibility of enhancing L2/FL reading rate without an accompanying decrease in reading comprehension. However, Fraser (2004:136) along with other authorities cited in (Anderson, 1999: 1) acknowledge that very little empirical research has been carried out to examine the impact of rapid reading instruction on L2 or EFL Learners' reading comprehension (Anderson 1983; Cordy and Anderson 1993; Cushing Weigle and Jensen 1996; Mahon 1986; in Anderson, 1991: 1). In the same line of thought, Fraser (200: 136), and Carrel and Grabe (2002: 242) invite L2 / EFL Teachers to experiment with several rapid reading activities in order to assess their effect on both reading rate and reading comprehension.

3.2 Research Methodology

3.2.1 Research Questions

The current study builds on the findings of the exploratory studies discussed earlier in 3.1 and attempts to answer the following questions:

1. Is there any relationship between reading speed and reading comprehension?
2. If there is a relationship between reading speed and reading comprehension, is it axiomatic that improving reading speed will lead to lower understanding?

3. Would training first-year LMD students of English as a Foreign Language at Mentouri University of Constantine to enhance their reading speed through paced-reading activities lead to reading speed improvement without an accompanying decrease in reading comprehension?

Hence, in this chapter, we attempt to investigate the effects of adopting a paced-reading programme on reading speed and reading comprehension.

3.2.2 The Hypothesis

In conducting the present study, we hypothesize that training first-year LMD students in paced-reading would improve their reading speed without a concomitant decrease in reading comprehension.

To achieve this purpose, one tool of research is felt necessary: the comprehension tests made up of multiple choice questions and true/false questions to evaluate students reading comprehension.

3.2.3 Research Design

The present study focuses on two of the most common types of research: correlational and experimental research designs. Correlational studies are carried out to explore the nature and strength of the relationship among variables a researcher is interested in (Brown, 1988: 126). That is to say, the degrees to which two or more variables covary or vary together. Yet, it is worth noting that a correlation between two variables does not necessarily mean causality or that one variable causes the other (Marczyk, *et. al.*, 2005: 3).

Experimental designs, on the other hand, rely principally on testing cause-and-effect hypotheses and drawing conclusions by comparing two groups on one possible outcome (Marczyk, *ibid.*). They are considered as a "gold standard" in determining how a new

intervention or procedure (the independent variable) causes an effect on the dependent variable (Marczyk, *ibid.*, 131) as opposed to a simple correlation between variables. In the present study, the independent variable is the teaching method which consists of paced-reading activities which are considered as innovative materials, and the dependent variables consist of reading speed and reading comprehension.

Experimental designs rely heavily on statistics which are defined by Wine (1976: 2-3) as a scientific procedure that enables the researcher to gather, arrange, examine, explain and present a set of information in the form of numeral data. These statistics are further classified by Marczyk (*op. cit.*, 209) into two major groups: Descriptive statistics through which a researcher reports a set of data and investigates them, and inferential statistics which are applied to draw cause-and-effect conclusions (*ibid.*). This type of research should be (a) *systematic* -using clear procedural rules, (b) *logical* -following a logical order, (c) *tangible* -based on gathering and using real world data, (d) *replicable* -allowing for possible reproduction of the same experiment under the same conditions, and (e) *reductive* -being able to minimize facts' confusion (Brown, *op. cit.*, 4). In the current study, an experimental design is constructed following three steps: a pretest correlation, a treatment, and a posttest correlation.

Step one: pretest correlation

The correlational design has been applied in this investigation to shed light on the nature and strength of the relationship between reading speed and reading comprehension. That is to say, the extent to which they are said to be linked. To his end, we have relied on calculating a pretest correlation coefficient "r" to verify whether the study variable-reading speed and reading comprehension are totally independent or correlated.

Step two: the treatment

In addition to the correlation, a treatment is undertaken to explore the effects of paced-reading exercises on first-year LMD students' reading speed and comprehension. In other words, we want to check whether including paced-reading exercises in reading lectures would improve students reading speed without negatively affecting comprehension.

Before embarking upon the treatment, a sample of 56 students has been selected and assigned to two treatment groups, one experimental group who receives training in paced-reading activities and one control group who has not been trained at all. Before we indulge in the treatment, participants' reading speed and comprehension are pretested via a timed reading followed by ten MCQ to test their reading comprehension. The same test is administered again as a posttest to serve the same purpose after a treatment period which lasts nine weeks, spread over eighteen sessions in terms of two sessions per week.

Step three: posttest correlation

To verify whether the relationship between reading speed and reading comprehension has been affected by the treatment, a posttest correlation is calculated.

Both treatment groups' pretest and posttest scores have been analyzed. The unit of analysis is the gain scores in words per minute (w/m) in reading speed and in percentages in reading comprehension. Our analysis has been divided into four parts. In the first part, a correlation coefficient "r" is calculated to examine reading speed and comprehension covariance. Then, the means of these two variables are compared in the pretest and posttest. After that, two t- tests have been calculated to test the mean difference between the two groups (control and experimental) in terms of improvement in both reading speed and comprehension to check whether it is statistically significant or not. Finally, another

correlation coefficient "r" has been computed. It is on this basis that the established hypothesis could be confirmed or infirmed.

3.2.4 The Population

According to Brown (1988, 114)," A population is the entire group that is of interest in a study". Miller (1975: 59) defines the word population, being used in statistics, as a term applied to describe "all possible objects of a particular type", being subjects or measurements. From a population of interest, we take a sample through which we seek to make inferences about the population itself (Brown, *ibid.*, 60).

The population of the current investigation consists of first year LMD students preparing for a "Licence degree" in English as a foreign language at Mentouri University of Constantine, Algeria, and who have already studied English in Middle and Secondary Schools for five years. This population has been specifically chosen for the following reason. It is at the level of first year LMD that the students study the module of "Methodology" or "Study Skills", where they learn different study skills namely using a dictionary, note taking and reading. In fact, it is only at this level – compared to the other levels, second and third year LMD – that the reading skill is taught, which makes it possible for us to carry out this investigation.

3.2.5 The Sample

According to Brown (*op.cit.*, 114), "A sample is a subgroup taken from [a] population to represent it". There are two ways of sample selection: using groups randomly selected for an experiment such as in the pretest-posttest designs and experimental/control group designs, or using pre-existing groups like in naturally occurring group designs (quasi-experimental-designs) (Brown, *ibid.*,154) .

In our study, we have opted for a naturally occurring group design or a quasi-experimental-design which is very similar to the experimental/control group design except that it relies on comparing pre-existing groups without being randomly assigned. In this study, comparing group means in naturally occurring classrooms. The current study was administered in the academic year 2006 – 2007. The population, to which we wish to generalize the results of the experiment, is First year LMD students which constitute a total of approximately 700 students scattered over 20 groups. Brown (*ibid.*, 112 – 113) states that the bigger the sample, the better it is to represent the whole population. However, according to him, the answer to the question about how large a sample must be is not easy to answer. It is a quite "subjective" matter which depends on both situation of the study and statistics involved in it.

Our sample consists of 56 participants divided into one experimental group and one control group of 28 students each. We limited our sample to this size (56 participants) for the following reason. In this investigation, the participants are supposed to take a pretest before we embark upon the treatment and a posttest after we finish it. The students take these tests individually; that is to say, one student at a time. After being alone with the teacher (researcher) in an empty classroom, each student goes through a timed reading in which he reads a text silently one time, then, the time he spends is recorded. After that, he answers comprehension questions. Approximately 13 minutes per student are needed to accomplish the test (reading the passage and answering comprehension questions).

Indeed, it is time consuming to administer the same test for the whole sample in the same day. It needs a whole day for both pretest and posttest. In addition, during the whole treatment one has to make sure that the students have read the text silently only once, to

record the time of their readings, and to calculate their reading speed. This process requires a small sample.

So, for reasons of time economy, practicality and accuracy one has decided to limit the sample's size to 56 participants. This sample includes the students who have taken the pretest, have been under observation during the treatment, and finally have been posttested.

3.3 Materials Used for Practice

In this study, for the purpose of improving reading speed, training in paced- reading exercises has been adopted. Moreover, timed reading has been used as a means of evaluating students' reading speed and reading comprehension in the pretest and posttest. In fact, these two exercises are amongst others which help improving reading speed if applied over a long period of time (see chapter 2, section 2.2.5). In this respect, Browning (2003: 1) asserting the significance of timed reading in reading speed development, states: "When teachers apply timed reading to their program, they better prepare their students for the fast-paced world ahead of them". Anderson (1999; cited in Browning, 2003: 1) notes that improving reading speed through timed reading helps the students to meet the challenges they encounter in the collegiate playing field. These two types of exercises (timed and paced reading) are defined and adopted during the treatment as follows:

3.3.1 Timed-Reading Tasks:

In a timed-reading task the students read the passages at their normal and comfortable speed. When they finish reading, they calculate their reading speed by dividing the number of words in the text by the time they have taken to read it (Nuttall, 1985: 36; Champeau de Lopez, 1993: 50; Comon and Heavers, 1998: 82). For example, if they took four minutes to read a 500 word text, their reading speed would be: $500: 4 = 125$ words per minute.

3.3.2 Paced-Reading Tasks:

Anderson (1999: 3) states: "The class paced reading activity allows the class to set a goal for a minimal reading rate". In other words, the class establishes a push speed or pacing speed which is beyond or above their normal reading speed. The students will be trained via different paced-reading exercises to attain this speed when they read. In paced-reading exercises, the teacher controls the time allowed for the readings (Champeau de Lopez, 1993: 50). Concerning the passages to be read, a mark is placed in the margin of the text next to the line containing each 100th word. The teacher then tells the students, with a tap on the desk, to move to the next mark, according to the speed the teacher is pacing (Champeau de Lopez, *ibid.*, Anderson, 1999: 4). In our case, we are pacing at 150 words per minute, so the tap would be every 45 seconds to read 100 words.

Anderson (*ibid.*, 4) stresses that the students whose reading speed is faster than the one the class is pacing for (in our case 150 words per minute) are not expected to slow down. However, those who are not able to keep up with the established speed are recommended to extend their practice in paced reading. He asserts that the teacher should review a class paced speed goal and adjust it if necessary to make sure that his students can meet the class paced challenge (*ibid.*).

In this study, one has followed the same steps of Cheryl Champeau de Lopez (*op.cit.* , 51) who carried out a study in Venezuela aiming at improving reading speed using the following combination of timed reading and paced reading. Before indulging in the treatment, one has administered a pretest using a timed reading of about 500 words to evaluate the participants' reading speed and comprehension. During the treatment, one has gone through training in a series of paced-readings. And at the end of the treatment, one

has delivered another timed reading identical to and serving the same purposes as the pretest.

Many authorities acknowledge the significance of adopting a paced-reading program in improving the students' both reading speed and reading comprehension (Browning, 2003: 2). However, as Browning notes, "Timed reading involves the use of various strategies in conjunction with in-class exercises and extensive timed reading". He asserts: "Timed reading is not reading as fast as you can over a passage and simply marking the gradual improvement (if there is any); it involves the adoption of reading strategies via the teacher's instruction" (Browning, *ibid.*). In the light of Browning who stresses the significance of strategic application for timed reading success, and for the aim of attaining the goal of the current study, improving reading speed without decreasing reading comprehension, we have decided to apply some strategies we felt necessary to attain this aim. These are: skimming, scanning (see chapter 2, section 2.2.5), and prediction from the title to activate students' background knowledge (see chapter 2, section 2.1.2.4). In fact, a strategic timed reading application has been adopted in the treatment. We hope that this will add more merit to our study.

3.3.3 The Texts

The texts have been selected according to some criteria (see in chapter 2, section, 2.2.6); namely readability, suitability of content, and exploitability.

3.3.3.1 The Pre and Post Tests Texts

Two texts of approximately 500 words have been selected from Gerald and Vivienne Mosback (1976) *Practical Faster Reading* (see Appendices A and G).

3.3.3.2 The Treatment Texts

Twenty five passages whose length ranges from 275 words to 555 words are selected from three main sources: Gerald and Vivienne Mosback (1976) *Practical Faster Reading* (1976), Marcia J. Coman and Kathy L. Heavers (1998) *How to Improve your Study Skills* (1998), and Margaret Baudoin *et al.* (1994) *Reader's Choice*. The former source offers a course for non-native speakers of upper intermediate and more advanced students in improving the reading of expository English by creating a kind of balance between increasing reading speed and improving reading comprehension. The latter two sources are used by teachers, at the department of English, Constantine, to implement first-year LMD methodology lectures. They provide whole sections with different exercises intended to improve reading speed as a means of better understanding.

3.3.3.3 Type of Texts

In the current study, we have opted to select expository texts to improve the speed of reading. This is based on the assumption that most of the knowledge first year LMD students receive in their lectures in English as a Foreign Language at Mentouri University of Constantine is expository or informational knowledge. The latter is instructed in the modules of 'Methodology', 'English for Specific Purposes', 'Culture de la langue', and 'Written Expression' except in the module of 'Literary Texts' where students encounter narrative texts and poetry.

3.3.3.4 Length of Texts

The length of the passages used in the training phase of the treatment (see the following section) for paced reading practice increases gradually from approximately 275 words in the first text to 555 words in the last one. This increase in the passages' length is justified by the way one has programmed paced-reading activities. In fact, these activities may be

prepared in two ways; either by using passages of the same length and increasing the speed of reading gradually, or by increasing the length of the passages gradually keeping reading speed constant (Champeau de Lopez, 1993: 51). We have chosen the second method. Worth noting that this increase occurred progressively to make the students get used to practice paced reading over short passages before they move to longer selections.

3.3.3.5 Simplicity of Texts

As discussed in (chapter 1, section, 2.2.6), among the characteristics of text selection to improve reading speed according to Nuttall is readability, She (*op.cit.*, 1982: 35) argues: "if the students are to read faster and develop the skills of skimming and scanning, they practice on simple material". A simple text, according to her, is one which is not dense (in which few words express a lot of amount of information) and not full of new words, complex sentences and difficult ideas. Being in accordance with Nuttall, Frazer (*op.cit.*, 2004: 140) asserts that the text needs to be simple in terms of vocabulary, syntax, and content.

Both of them agree that this simplicity assists in the students' easy process of the material (Nuttal, 1985: 88; Frazer, *ibid.*). In addition, they stressed the role of this easy processing in attaining not necessarily a detailed comprehension of the print but only a general understanding of it which is the expected reading goal in the current study. In this respect, we have selected the passages that represent a great interest for the students in order to motivate them during the treatment. The topics of these passages are of general knowledge that the students may find interesting; furthermore, the difficult or unfamiliar words that may hamper the students' reading or slow them down have been substituted by other simpler synonyms to facilitate their process of reading. Before interfering with the treatment texts for the aim of simplification, some texts were sent to the University of Oum

Bouaghi to evaluate their level of difficulty. First year students, there, were asked to read the texts and underline the difficult words they encounter. On this basis, simplification of difficult vocabularies was achieved using simpler synonyms instead. Having an idea of the unfamiliar words students may face when they read, we attempted to simplify the difficult ones found in the other texts which were not sent to Oum Bouaghi University for evaluation.

At the end of each session during the treatment, as a researcher, the teacher asks the trainees if the text was interesting for them and whether they find it difficult. This aims at confirming or disconfirming the choice of the actual passage and sets a basis for the selection of the coming passages.

3.3.4 Comprehension Tests

From the wide range of means of testing reading comprehension such as question answering, the close procedure, the summary...etc (chapter 2, section 2.1.2.5), and for the aim of assessing the participants' degree of reading comprehension in the current experiment we have opted for two types of comprehension tests: multiple choice questions (MCQ) and true / false Questions.

Nuttall (*op.cit*, 37) points out that reading speed is of no value unless reading comprehension is measured. According to her, this may be achieved as objectively as possible through multiple choice questions or true / false questions. These measures have been adopted in many sources such as Gerald and Vivienne Mosback (1976) *Practical Faster Reading*, Coman and Heavers (1998) *How to Improve your Study Skills* and Mania and Eric De Leeuw (1965) *Read Better Read Faster*.

DeLeeuw (1965) view multiple choice questions (MCQ) as a suitable measure of testing for its simplicity and precision. Furthermore, MCQ is a recognition test which assesses the minimal comprehension rather than recalling information (DeLeeuw, *ibid*, 32). He considers that: "[...] multiple choice questions are a satisfactory measure of the basic comprehension of short passages where the meaning is spread fairly evenly ". This type of questions has been solely adopted as a measure of testing in the pretest and posttest to reduce to a certain extent students' possibility to guess the answer. By asking them to choose one out of four options in MCQ, trainees chance to guess the answer is minimized as compared to true/false questions where the answer is more likely to be a mere guess.

During the treatment stage, we have implemented both measures of testing, T/F questions and MCQ questions; more precisely six MCQ tests and six T/F tests because (a) they are easy to be marked, (b) they do not lend themselves to any form of personal judgment when marking the learners' answers because they provide only one possible correct answer. So, they are totally objective measures of evaluation.

The participants' reading comprehension of the texts has been calculated through percentages by allocating each true / false question or MCQ question 10 %; that is to say, ten questions equal to 100%. This means that one correct answer represents 10 % comprehension of the text, 7 correct answers represents 70% comprehension, and 10 right answers represent 100 % comprehension.

3.3.5 Treatment Phases

3.3.5.1 The Pretest and Posttest Description

Before we embark on the current study, we have raised the students' awareness of the bad habit of slow reading and its disadvantages. As a teacher, one has informed the

students about their ability to increase their reading speed by practicing special exercises. She has acquainted them with the training which would take place. The students show a great enthusiasm to go through this experience to improve their reading speed and get rid of the slow reading habit.

For the pretest, one has prepared a text (see appendix A) taken from Gerald and Vivienne Mosback (1976: 43) of about 500 word. In order to measure the students' comprehension of the text, we have prepared ten multiple choice questions taken from the same reference. The 56 participants are pretested via a timed reading test. The pretest is administered individually. Every student is given out the text and is asked to begin reading only when he is given the word. Once the student finishes reading the passage silently at his own speed only one time, the researcher marks down his reading time using a stop watch, then, asks him to answer comprehension questions. The students should answer questions without looking back to the passage. Five or six minutes should be enough to answer the questions. Reading the passage and answering the questions should not take more than 10 to 12 minutes altogether. (Mosback, 1976: ix).

Reading comprehension test is composed of ten multiple choice questions. Each question is allocated 10 %, this means that ten correct answers correspond to 100 % of text comprehension. For example, if a student answers six correct questions, it means that he has understood 60 % of the text. Reading speed is calculated by dividing the total number of words in the text (500) by the time the student spends in reading the passage.

The posttest was identical to the pretest in terms of text length and level of difficulty. It was administered in the same way, under the same conditions. The posttest passage was extracted from the same source as the pretest *Practical Faster Reading* (1976) by Gerald and Vivienne Mosback.

3.3.5.2 The Treatment Period:

It is believed that adopting a paced-reading program results in improving the students' both reading speed and reading comprehension (Browning, *op.cit.2*). However, as Browning notes, "Timed reading involves the use of various strategies in conjunction with in-class exercises and extensive timed reading". He asserts: "Timed reading is not reading as fast as you can over a passage and simply marking the gradual improvement (if there is any). It involves reading strategies via the teacher's instruction". (Browning, *ibid.*). In the light of Browning, and for the aim of attaining the goal of the current study, improving reading speed without missing comprehension, one has decided to follow the coming steps to achieve a successful application of a timed reading programme. The treatment period has been divided into two phases: a preparation phase and a training phase.

3.3.5.2.1 The Preparation Phase:

In this phase, one has opted for a number of reading strategies; namely skimming, scanning, and prediction from the title. These strategies are singled out for two reasons. First, they are part and parcel of official programme of the module of methodology of first year LMD. Both control and experimental groups are initiated to skimming and scanning along with prediction from title to introduce them to the concept of active reading. Students are made aware that active reading equals reading with a purpose. The latter determines how to read a material and what to extract from it (see chapter1, sections, 1.5, 1.6). Accordingly, the purpose of reading influences students' decision about which parts of the material to be skipped and which ones to be read more carefully. A dictionary, for instance, is not read in the same manner as a newspaper or an important lecture. Hence learners' attention is directed towards adjusting their reading speed according to the purpose, difficulty, and familiarity with the topic of the print at hand.

Second, the experimental group participants are introduced to these selected reading strategies to prepare them gradually for the training in paced reading. The latter requires the trainees to read selections quickly under time limits, and this necessitates a preparatory stage that allows the students get ready for paced reading activities, especially that they are not used to the notion of speed reading. Hence the researcher has attempted to join two aims in the conduction of this experimental study: to make the aforementioned reading strategies serve the training purposes, and in the same time not to deprive the control group of the official programme.

(1) Skimming: skimming, according to Grellet (1981: 19), involves exercises where students are asked to say briefly what a text is about by glancing quickly through the text (see chapter 2, section 2.2.5).

After explaining the skimming strategy, the students have gone through a series of six passages to practice it. The latter are selections from biographies of famous people. Preceding each selection is a question about a research topic. Students are required to skim each passage in one minute to decide whether a careful reading would provide information on the topic given. They would check "yes" or "no" to this question. Students, together with the teacher (researcher), have practiced one selection as a model where explanation about the parts to be read is provided stressing the point that only selected sentences of each paragraph are necessary to obtain its general idea. They have to read the first and last sentences of each paragraph and to use textual clues such as italicized or underlined words, headlines or subtitles...etc. They do not have to read every word and every sentence. They have been, then, provided with five other selections similar to the example to skim in one minute and decide if careful reading would be valuable (see Appendix B).

(2) Scanning:

Scanning activities require the students to search for specific information such as searching for a specific word in a text. It could be a date or a number in a list (Grellet, *ibid.*,) (see chapter 2, section 2.2.5).

The students were provided with three selections to practice the scanning strategy after it has been explained and compared to the skimming strategy. These exercises involve the learners to answer very specific questions about precise names, places, dates, and numbers (see Appendix C).

(3) Prediction from the Title:

Since the aim of the current study is to create a balance between improving reading speed and reading comprehension, not developing speed at the expense of reading comprehension, we have chosen prediction from the title as a pre-reading strategy relying on the fact that having a prior knowledge about the content of a text assists in raising the students' speed of reading and comprehension (Browning, *op.cit.*, 2).

Students are given a text with a title (see Appendix D) and are required to suggest two ideas which they expect the text to cover. After that, they read the text to see whether the text satisfies their predictions. At this level, the students are made aware that it is not necessary that the text would answer their own questions. But, at least they are reading actively by anticipating the text they are about to read in order to confirm or disconfirm their guesses when they read; not being passive readers who just let the author pour the information into their heads. Students will have more practice in using prediction from the title as a reading strategy to elicit their background knowledge about the passages used during the training phase.

3.3.5.2.2 The Transitional Phase

As a transitional stage, before they move to the training phase, the students are introduced to reading for the main idea exercises. In this step, we have emphasized the combination of both intended goals (reading speed and comprehension); that is to say, the trainees should be able to read under time limits to improve their reading rate, but at the same time they are required to find the main idea of the paragraph in as a short time as possible.

Students are handed out six paragraphs (see Appendix E); each one was followed by a question about its main idea. Four options are offered, and the students have to select the one that best expresses the main idea of the paragraph.

During the preparation phase, both control and experimental groups have received the same lectures about the previous reading strategies (skimming, scanning, and prediction from the title). The only exception was in the last section (reading for the main idea) where students in the control group read at their comfortable speed to identify the paragraph's main idea, whereas students in the experimental group read the paragraphs under time limits to find it. The last section is considered as a transitional stage from the preparation phase to the training phase only for the experimental group. It aims at making the experimental group students practise paced-reading exercises over short selections (paragraphs) before they move gradually to longer ones (texts). This phase distinguishes the different treatments provided to the control and experimental groups.

3.3.5.2.3 The Training Phase

At this level, the experimental group students are trained to read under time limits moving gradually to read longer selections. They are now required to read as quickly as they can, but at the same time to understand as much as they can. That is to say, not only to

be able to answer one question about a paragraph's main idea, but to get a general understanding of a text. To achieve this aim, a series of paced reading exercises is applied.

Before indulging in this practice, a push speed or a pacing speed is set (Anderson, 1999). One has used the result of the pretest to establish this speed goal. The average speed of the experimental group in the pretest is 109w/m. We have decided to establish 150w/m as our push pace or goal speed; that is to say, through paced reading activities, the students are trained to read beyond their normal speed 109w/p to attain 150w/m at the end of the treatment.

Students have gone through a series of paced readings of twelve texts (see Appendix F) whose length increases gradually from 275 words in the first text to 555 in the last one. This gradual increase in texts' length is intended to serve the following purpose. Paced readings could be adopted in two ways: either by practicing over passages of the same length and increasing reading speed gradually during the treatment, or keeping the same reading speed with a gradual increase in the length of texts (Champeau de Lopez, 1993: 51). We have opted for the second option. Hence, the texts length was carefully considered to serve this purpose.

In order to facilitate the practice of the training phase; i.e., paced-reading exercises, we have adopted the three phases reading lesson which consists of a division of the reading lesson into a three distinct but related phases which run as follows:

(1) Pre-Reading Phase:

As a pre-reading phase, prediction from the title has been adopted. Before handing out each passage, the teacher writes its title on the blackboard. This is used to equate certain aspects of previous knowledge for all the students who are supposed to predict what the

text might deal with. Students are encouraged to respond freely expressing their guesses about the text at hand.

(2) During Reading Phase:

After determining the class reading speed goal (150w/m), in each session during the training phase, students in the experimental group are handed out a passage to practice paced reading. These passages contain marks indicating every 100 words on the left margin. The teacher then calculates the number of words needed to be read in one minute in order to achieve the class speed goal. In our case, our goal is to read 150w/m. The experimental group is expected to read 100 words every 45 seconds. As each 45 seconds period elapses, the teacher tells the class to move to the next mark. When the time allocated to read the passage ends, the students are required to stop reading and fold the copies on which the passage is written. The teacher passes to collect them to be confident that they have been read only once.

Students are encouraged to keep up with the established class speed goal. At the beginning of the training phase (during the first two sessions of paced readings practice), in order to check whether our speed goal suits the experimental group's level and whether adjustments are necessary to allow students to meet the class paced challenge, we asked the students who were not able to finish reading in due time to raise their hands. Only a minority of four or five students are often left with three or four lines. On this basis, we have decided to keep the same speed goal on (150w/m) without adjusting it.

(3) After Reading Phase:

After collecting the passages, reading comprehension questions' sheets are distributed. These questions are shaped in two ways: either 10 general true/false questions or 10 multiple choice questions (MCQ) four options each, for each paced reading. These

comprehension questions are to be answered without referring to the text; each one is allocated a score of 10%.

Students in the control group do not practise paced-reading exercises. They are asked to read the passages at their comfortable speed one time. When they finish, they mark down the time they spent to read the selection, and move to answer comprehension questions. Afterwards, we calculate their reading speed and score their reading comprehension answers.

Conclusion

Throughout this chapter, the place of reading speed and reading comprehension in the field of research is presented. The motives behind carrying out the current study and the reasons for carrying an experimental design are highlighted. A thorough explanation of the participants, measures, and procedures applied in the study is also provided.

CHAPTER FOUR: FIELD WORK

DATA ANALYSIS

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CHAPTER FOUR: FIELD WORK

DATA ANALYSIS

Introduction

To explore how reading speed and reading comprehension covary, and to examine how these two variables are affected by the implementation of a paced-reading programme in first year LMD students EFL reading course, an experimental design is led in three steps. In the first step, a pretest is administered to test students' reading speed and comprehension. In the second step, a treatment where students are trained in paced-reading activities takes place. And in the final step students' speed of reading and comprehension are evaluated via a posttest. The scores obtained in the pre and posttests are compared and analyzed. Three measures of investigation are adopted to assess the study hypothesis. In addition to the correlation coefficient which is applied to determine the extent to which reading speed and comprehension are correlated in the pre and post tests, comparison of means, and t-tests are also utilized to evaluate the participants' improvement in these two variables.

4.1 The Correlation between Reading Speed and Reading Comprehension of the CG and EG in the Pretest

Correlations are the most fundamental and convenient tool of measuring associations between two or more variables (Marczyk, *op.cit.*, 2005: 216). The degree to which two sets of scores covary or vary together is estimated by calculating a correlation coefficient (r). It can range from a perfect positive relationship of + 1.0 to no systematic relationship at 0.0 to a perfect negative relationship of -1.0. When such a coefficient is further away 0.0 toward +1.0 or -1.0, the relationship represented between the two sets of scores (variables) is stronger (*ibid.*, 216 - 217).

The study of the correlation is undertaken in order to explore the relationship between reading speed and reading comprehension. In fact, we are seeking at investigating the association between these two variables relying on the theoretical framework in chapters one and two. However, there is always the possibility that the results might show no relationship between them. This leads to the need for a special type of hypothesis called the null hypothesis. It is a hypothesis of no association in a correlational study (Brown, *op.cit.*, 1988: 110). The null hypothesis is defined according to Kirk (1982: 26) as "a statement about one or more parameters of a population distribution that requires verification"; that is to say, it is subject to statistical testing. It is either confirmed or rejected. If the null hypothesis is rejected, the researcher may conclude that there is a relationship between the variables being studied. Once the null hypothesis is rejected the alternate one or "the research" or "experimental" hypothesis remains tenable. For Kirk (*ibid.*, 26),

The null hypothesis is the one whose tenability is actually tested. If on the basis of this test the null hypothesis is rejected, only the alternative hypothesis remains tenable. According to convention, the alternative hypothesis is formulated so that it corresponds to the experimenter's scientific hunch. The process of choosing between H₀ and H₁ is called hypothesis testing.

(Kirk, 1982: 26)

On this basis, the null hypothesis in the current study is:

H₀: There is no systematic relationship between the speed at which first-year LMD students read a print written in English as a foreign language and their amount of text comprehension; That is to say, H₀: $r = 0$.

H₁: There is a positive relationship between the speeds at which first-year LMD students read a print written in English as a foreign language and their degree of text comprehension; In other words, H₀: $r > 0$.

4.1.1 The Correlation Coefficient Formula

In order to calculate the correlation coefficient (r), we apply the following formula:

$$r(xy) = \frac{\sum xy}{(N)(SD_x)(SD_y)}$$

\sum → the sum

$x = (X - M_x)$ → the deviation of x scores from the mean (M_x is the mean of x scores: the sum of x scores divided by the number of cases N).

$y = (Y - M_y)$ → the deviation of y scores from the mean (M_y is the mean of y scores: the sum of y scores divided by the number of cases N).

xy → the cross-products (multiplication of x and y deviations).

N → the number of cases.

$$SD_x = \sqrt{\frac{\sum x^2}{N}} \rightarrow \text{standard deviation of X scores.}$$

$$SD_y = \sqrt{\frac{\sum y^2}{N}} \rightarrow \text{standard deviation of Y scores .}$$

4.1.2 Calculation of the Correlation Coefficient (r)

| Participants | X | Y | X | y | x ² | y ² | xy |
|--------------|-----|----|-------|-------|----------------|----------------|--------|
| 01 | 120 | 10 | 12.5 | -1.96 | 156.25 | 3.84 | -24.5 |
| 02 | 120 | 16 | 12.5 | 4.04 | 156.25 | 16.32 | 50.5 |
| 03 | 85 | 18 | -22.5 | 6.04 | 506.25 | 36.48 | -135.9 |
| 04 | 90 | 12 | -17.5 | 0.04 | 306.25 | 0.00 | -0.7 |
| 05 | 125 | 14 | 17.5 | 2.04 | 306.25 | 4.16 | 35.7 |
| 06 | 98 | 8 | -9.5 | -3.96 | 90.25 | 15.68 | 37.62 |
| 07 | 90 | 12 | -17.5 | 0.04 | 306.25 | 0.00 | -0.7 |
| 08 | 95 | 10 | -12.5 | -1.96 | 156.25 | 3.84 | 24.5 |
| 09 | 102 | 14 | -5.5 | 2.04 | 30.25 | 4.16 | -11.22 |
| 10 | 92 | 14 | -15.5 | 2.04 | 240.25 | 4.16 | -31.62 |
| 11 | 121 | 10 | 13.5 | -1.96 | 182.25 | 3.84 | -26.46 |
| 12 | 101 | 10 | -6.5 | -1.96 | 42.25 | 3.84 | 12.74 |
| 13 | 90 | 8 | -17.5 | -3.96 | 306.25 | 15.68 | 69.3 |
| 14 | 102 | 16 | -5.5 | 4.04 | 30.25 | 16.32 | -22.22 |
| 15 | 102 | 18 | -5.5 | 6.04 | 30.25 | 36.48 | -33.22 |
| 16 | 139 | 14 | 31.5 | 2.04 | 992.25 | 4.16 | 64.26 |
| 17 | 99 | 14 | -8.5 | 2.04 | 72.25 | 4.16 | -17.34 |
| 18 | 88 | 4 | -19.5 | -7.96 | 380.25 | 63.36 | 155.22 |
| 19 | 123 | 16 | 15.5 | 4.04 | 240.25 | 16.32 | 62.62 |
| 20 | 90 | 10 | -17.5 | -1.96 | 306.25 | 3.84 | 34.3 |
| 21 | 92 | 12 | -15.5 | 0.04 | 240.25 | 0.00 | -0.62 |
| 22 | 99 | 6 | -8.5 | -5.96 | 72.25 | 35.52 | 50.66 |
| 23 | 125 | 16 | 17.5 | 4.04 | 306.25 | 16.32 | 70.7 |
| 24 | 115 | 10 | 7.5 | -1.96 | 56.25 | 3.84 | -14.7 |
| 25 | 145 | 10 | 37.5 | -1.96 | 1406.25 | 3.84 | -73.5 |
| 26 | 115 | 14 | 7.5 | 2.04 | 56.25 | 4.16 | 15.3 |
| 27 | 98 | 10 | -9.5 | -1.96 | 90.25 | 3.84 | 18.62 |
| 28 | 97 | 4 | -10.5 | -7.96 | 110.25 | 63.36 | 83.58 |
| 29 | 143 | 14 | 35.5 | 2.04 | 1260.25 | 4.16 | 72.42 |
| 30 | 121 | 10 | 13.5 | -1.96 | 182.25 | 3.84 | -26.46 |
| 31 | 142 | 12 | 34.5 | 0.04 | 1190.25 | 0.00 | 1.38 |
| 32 | 97 | 12 | -10.5 | 0.04 | 110.25 | 0.00 | -0.42 |
| 33 | 116 | 12 | 8.5 | 0.04 | 72.25 | 0.00 | 0.34 |
| 34 | 121 | 14 | 13.5 | 2.04 | 182.25 | 4.16 | 27.54 |

| | | | | | | | |
|---|-----|----|-------|-------|---------|-------|---------|
| 35 | 97 | 16 | -10.5 | 4.04 | 110.25 | 16.32 | -42.42 |
| 36 | 149 | 6 | 41.5 | -5.96 | 1722.25 | 35.52 | -247.34 |
| 37 | 78 | 16 | -29.5 | 4.04 | 870.25 | 16.32 | -119.18 |
| 38 | 116 | 10 | 8.5 | -1.96 | 72.25 | 3.84 | -16.66 |
| 39 | 91 | 14 | -16.5 | 2.04 | 272.25 | 4.16 | -33.66 |
| 40 | 115 | 12 | 7.5 | 0.04 | 56.25 | 0.00 | 0.3 |
| 41 | 154 | 8 | 46.5 | -3.96 | 2162.25 | 15.68 | -184.14 |
| 42 | 90 | 12 | -17.5 | 0.04 | 306.25 | 0.00 | -0.7 |
| 43 | 130 | 12 | 22.5 | 0.04 | 506.25 | 0.00 | 9 |
| 44 | 67 | 10 | -40.5 | -1.96 | 1640.25 | 3.84 | 79.38 |
| 45 | 81 | 16 | -26.5 | 4.04 | 702.25 | 16.32 | -107.06 |
| 46 | 99 | 12 | -8.5 | 0.04 | 72.25 | 0.00 | -0.34 |
| 47 | 93 | 6 | -14.5 | -5.96 | 210.25 | 35.52 | 86.42 |
| 48 | 76 | 12 | -31.5 | 0.04 | 992.25 | 0.00 | -1.26 |
| 49 | 98 | 10 | -9.5 | -1.96 | 90.25 | 3.84 | 18.62 |
| 50 | 94 | 8 | -13.5 | -3.96 | 182.25 | 15.68 | 53.46 |
| 51 | 122 | 16 | 14.5 | 4.04 | 210.25 | 16.32 | 58.58 |
| 52 | 111 | 16 | 3.5 | 4.04 | 12.25 | 16.32 | 14.14 |
| 53 | 68 | 16 | -39.5 | 4.04 | 1560.25 | 16.32 | -159.58 |
| 54 | 99 | 12 | -8.5 | 0.04 | 72.25 | 0.00 | -0.34 |
| 55 | 149 | 10 | 41.5 | -1.96 | 1722.25 | 3.84 | -81.34 |
| 56 | 149 | 12 | 41.5 | 0.04 | 1722.25 | 0.00 | 1.66 |
| $SD_x = \sqrt{\frac{\sum x^2}{N}} = \sqrt{\frac{39060.21}{56}} = 26.41$ $SD_y = \sqrt{\frac{\sum y^2}{N}} = \sqrt{\frac{618.96}{56}} = 3.32$ $r(xy) = \frac{\sum xy}{(N)(SD_x)(SD_y)} = \frac{903}{56 \times 26.41 \times 3.32} = \frac{903}{4910.14}$ $r(xy) = 0.18$ | | | | | | | |

Table1: Computation of Pearson Product-Moment Correlation Coefficient (r) between Reading Speed and Comprehension in the Pretest

4.1.3 Interpretation of Pretest Correlation Results

With our one tailed test (i.e., a directional test), we predicted a positive correlation between reading speed and reading comprehension relying on the theoretical framework of the study. At 0.05 level of significance, with 54 degrees of freedom, the critical value of r is 0.22. Since the value of the r obtained is 0.18 is well above zero (as shown in table 1). $0.18 > 0$, so the null hypothesis that assumes no relationship between reading speed and comprehension ($H_0: r=0$) is rejected.

Moreover, the value of r obtained $r = 0.18$ is less than the critical value $r = 0.22$ ($0.18 < 0.22$) for 54 degrees of freedom, at 0.05 level of significance. So, the results of the correlation coefficient between reading speed and comprehension are not very significant. But, since the obtained $r = 0.18$ is very close to the critical value $r = 0.22$, we conclude that our two variables (reading speed and reading comprehension) are moderately associated as shown in the following scatter gram.

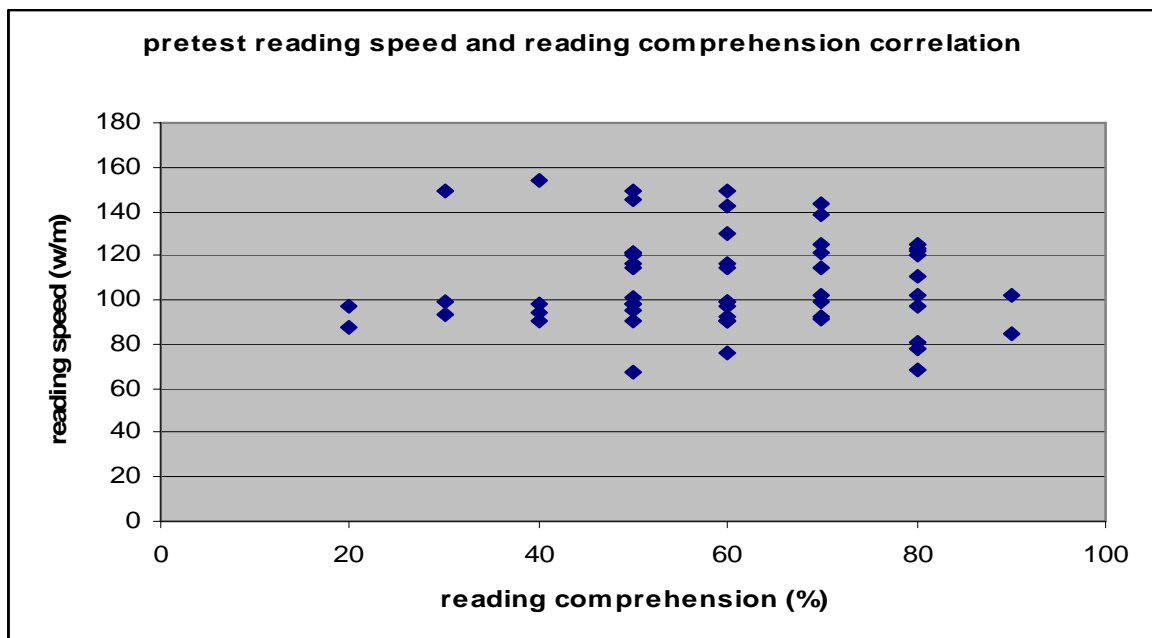


Figure1: Pretest Reading Speed and Reading Comprehension Correlation

Each point of this scatter graph indicates the score of one participant in both reading speed (on the vertical axis) and reading comprehension (on the horizontal axis). By looking at the complete pattern of dots on the scatter plot, we notice that the running of points is somehow diagonal starting from the lower-left in the direction of the upper right-hand corner of the diagram. Having a close visual examination of the scatter graph, we may get a visual impression of the degree to which the two variables (reading speed and reading comprehension) are correlated with each other. The dots are less closely packed around the imaginary diagonal line which goes across the diagonal group of dots relating reading speed to reading comprehension. That is to say, there is no linear relationship between these two variables. This makes us easily deduce a moderate or limited positive relationship between them. Although the gradual increase in reading speed scores is sometimes accompanied by an increase in reading comprehension scores, this is not always the case; sometimes increase in reading speed goes with a concomitant stability in reading comprehension scores; other times, high reading speed scores coincide with low reading speed scores and vice versa. Thus, we conclude that it would be more difficult to predict a person's degree of reading comprehension from knowledge of his scores on reading speed.

4.2 The Pretest Results

In the pretest, one has relied on the calculation of the means or the averages of reading speed and reading comprehension of the control and experimental groups. To this end, we have divided the sum of the scores obtained in reading speed and the scores gained in reading comprehension by the number of the participants in each group (see tables 2, 3 below).

| Participants | Control Group Scores (w/m) | Experimental Group Scores(w/m) |
|---------------|--|--|
| 01 | 120 | 143 |
| 02 | 120 | 121 |
| 03 | 85 | 142 |
| 04 | 90 | 97 |
| 05 | 125 | 116 |
| 06 | 98 | 121 |
| 07 | 90 | 97 |
| 08 | 95 | 149 |
| 09 | 102 | 78 |
| 10 | 92 | 116 |
| 11 | 121 | 91 |
| 12 | 101 | 115 |
| 13 | 90 | 154 |
| 14 | 102 | 90 |
| 15 | 102 | 130 |
| 16 | 139 | 67 |
| 17 | 99 | 81 |
| 18 | 88 | 99 |
| 19 | 123 | 93 |
| 20 | 90 | 76 |
| 21 | 92 | 98 |
| 22 | 99 | 94 |
| 23 | 125 | 122 |
| 24 | 115 | 111 |
| 25 | 145 | 68 |
| 26 | 115 | 99 |
| 27 | 98 | 149 |
| 28 | 97 | 149 |
| N = 28 | $\sum X = 2927$ | $\sum X = 3066$ |
| Mean | $\bar{X} = 105.6 \approx 106$ | $\bar{X} = 109.5 \approx 109$ |
| | $\bar{X} = \frac{\sum X}{N} = \frac{2927}{28} = 106$ | $\bar{X} = \frac{\sum X}{N} = \frac{3066}{28} = 109$ |

Table 2: Reading Speed Pretest Scores and Means

| Participants | Control Group Scores (w/m) | Experimental Group Scores (w/m) |
|--------------|------------------------------------|------------------------------------|
| 01 | 50 | 70 |
| 02 | 80 | 50 |
| 03 | 90 | 60 |
| 04 | 60 | 60 |
| 05 | 70 | 60 |
| 06 | 40 | 70 |
| 07 | 60 | 80 |
| 08 | 50 | 30 |
| 09 | 70 | 80 |
| 10 | 70 | 50 |
| 11 | 50 | 70 |
| 12 | 50 | 60 |
| 13 | 40 | 40 |
| 14 | 80 | 60 |
| 15 | 90 | 60 |
| 16 | 70 | 50 |
| 17 | 70 | 80 |
| 18 | 20 | 60 |
| 19 | 80 | 30 |
| 20 | 50 | 60 |
| 21 | 60 | 50 |
| 22 | 30 | 40 |
| 23 | 80 | 80 |
| 24 | 50 | 80 |
| 25 | 50 | 80 |
| 26 | 70 | 60 |
| 27 | 50 | 50 |
| N = 28 | 20 | 60 |
| N = 28 | $\sum x = 1650$ | $\sum x = 1680$ |
| Mean | $\bar{X} = 58.92 \% \approx 59 \%$ | $\bar{X} = 60 \%$ |

Table 3: Reading Comprehension Pretest Scores and Means

From tables (2, 3), one can notice that as far as reading speed is concerned, the control group has scored an average of 106 words per minute, whereas the experimental group has scored 109 words per minute. Concerning their reading comprehension, the former has marked a mean of 59 %, whereas the latter has marked 60 %.

Taking the pretest scores' distribution of reading speed into account in figure 2 below, one can distinguish two main categories in the control and experimental groups if we consider 100w/m as an average reading speed for both groups. The first category represents the participants whose reading speed is lower than 100 words per minute (below the average), whereas the second category represents those whose reading speed is higher than 100 words per minute (above the average). These categories are equal in terms of number and percentage, each one constitutes one half of each group i.e., 50 %.

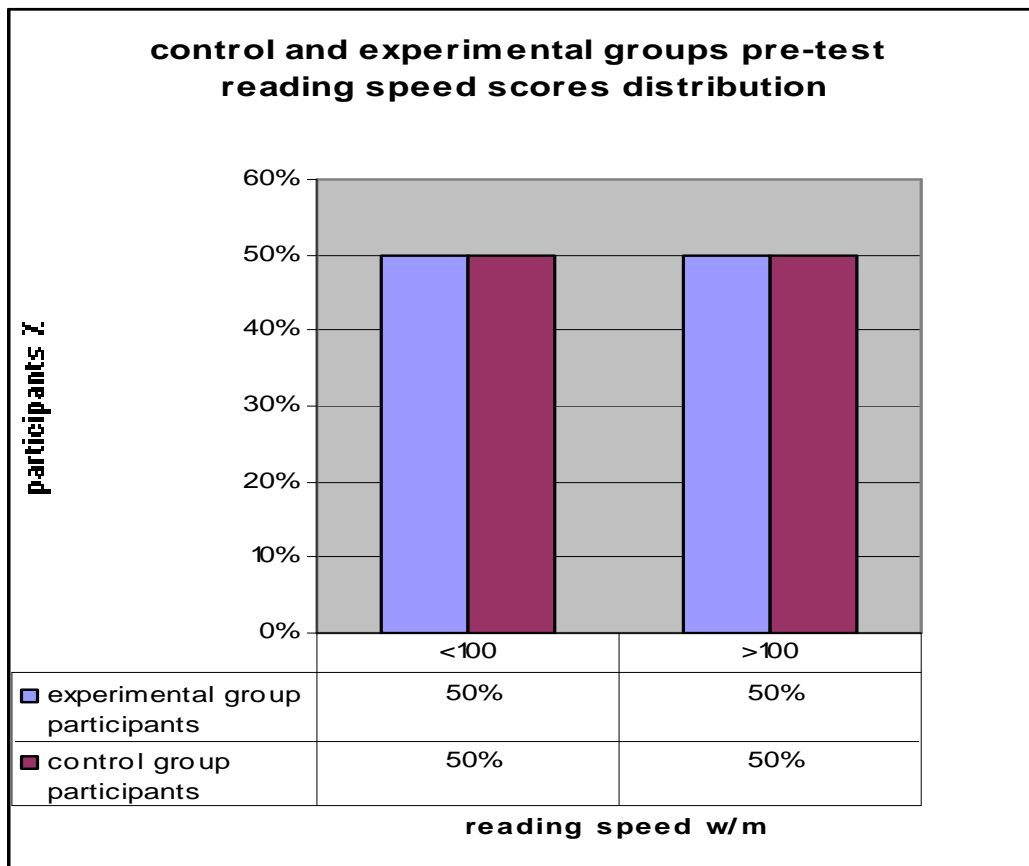


Figure2: Control and Experimental Groups Pretest Reading Speed Scores Distribution

Concerning reading comprehension scores, we have found three main categories in the control group and three main categories in the experimental group (see figure 3 below). The first category made up of the participants whose reading comprehension is below 50 % (low level of comprehension) forms a percentage of about 17.85 % in the control group and 14.28 % in the experimental one. The second category whose reading comprehension falls between 50 % and 70 % (above average and acceptable level of comprehension) constitutes the majority of the whole sample of the study. It equals 60.71 % in the control group and 64.28 % in the experimental one. The participants whose reading comprehension is above 70 % (high level of comprehension) is the last category. It stands for a percentage of 21.42 % in each group of the sample.

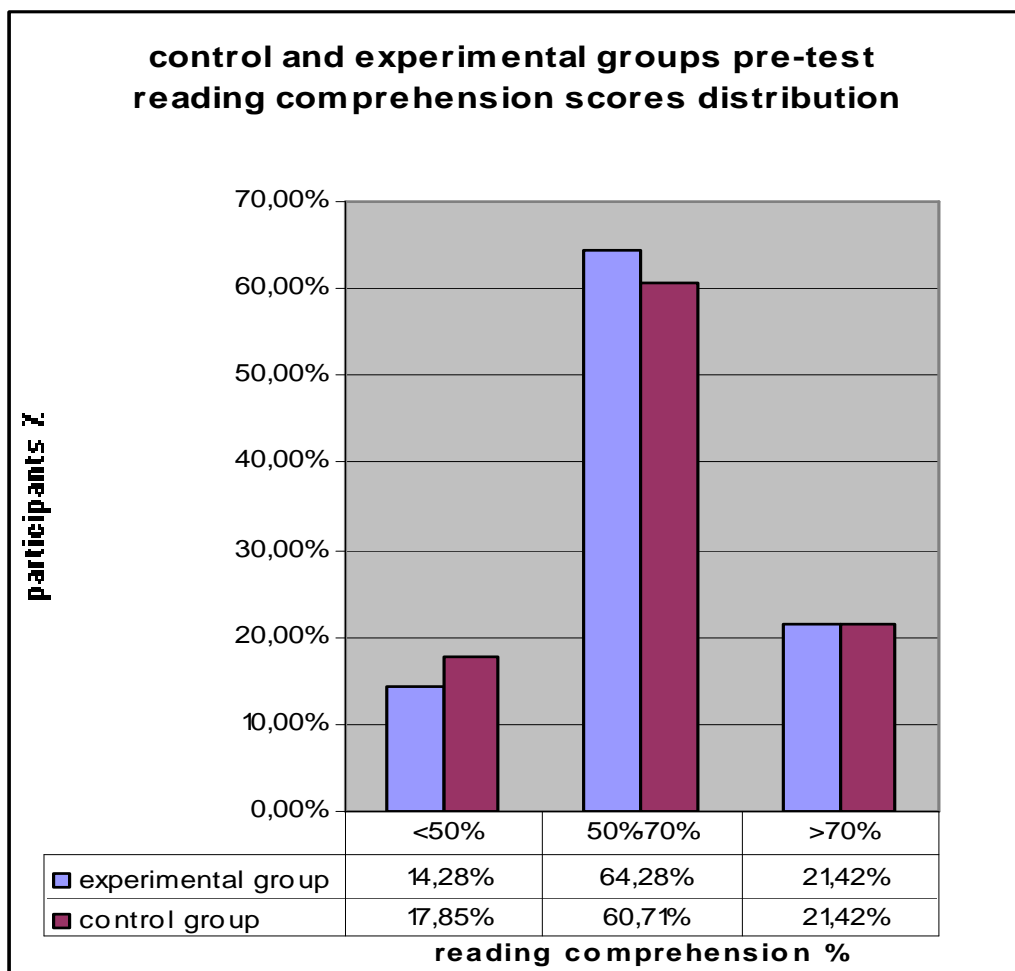


Figure3: Control and Experimental Groups Pretest Reading Comprehension Score Distribution

Comparing the means of reading speed and reading comprehension and considering the different categories found in both control and experimental groups prior to the beginning of the study, as shown in table 4 below, there is no significant difference between the two groups in the pretest neither in reading speed (106 \neq 109 a difference of 3 w/m) nor in reading comprehension (59 % \neq 60 %). One may conclude that the participants in both experimental and control groups have exhibited equivalent levels in reading speed and reading comprehension before embarking upon the treatment; any change occurs following the treatment would be attributed to the intervention or the independent variable (training in paced reading).

| | Control Group | Experimental Group |
|---------------------------------------|---------------|--------------------|
| The Mean in Reading Speed (w/m) | 106 | 109 |
| The Mean in Reading Comprehension (%) | 59% | 60 % |

Table 4: Pretest Reading Speed and Comprehension Means of the EG and CG

4.3 The Posttest Results

In the posttest, one has calculated the means of reading speed and reading comprehension of the control and experimental groups after the treatment period. The results are as follows:

| Participants | Control Group Scores (w/m) | Experimental Group Score (w/m) |
|---------------------|---------------------------------------|---|
| 01 | 123 | 121 |
| 02 | 124 | 171 |
| 03 | 87 | 177 |
| 04 | 97 | 102 |
| 05 | 130 | 103 |
| 06 | 98 | 151 |
| 07 | 82 | 152 |
| 08 | 82 | 160 |
| 09 | 105 | 103 |
| 10 | 99 | 132 |
| 11 | 125 | 101 |
| 12 | 76 | 164 |
| 13 | 74 | 158 |
| 14 | 117 | 108 |
| 15 | 104 | 122 |
| 16 | 127 | 85 |
| 17 | 151 | 153 |
| 18 | 73 | 129 |
| 19 | 117 | 131 |
| 20 | 98 | 119 |
| 21 | 89 | 75 |
| 22 | 101 | 131 |
| 23 | 105 | 150 |
| 24 | 101 | 131 |
| 25 | 128 | 128 |
| 26 | 104 | 127 |
| 27 | 88 | 152 |
| N = 28 | 86 | 130 |
| N = 28 | $\sum X = 2891$ | $\sum X = 3668$ |
| Mean | $\bar{X} = 103$ | $\bar{X} = 130.9 \approx 131$ |

Table 5: Reading Speed Posttest Scores and Means

| Participants | Control Group Scores (%) | Experimental Group Score (%) |
|--------------|------------------------------------|------------------------------------|
| 01 | 60 | 70 |
| 02 | 50 | 50 |
| 03 | 50 | 50 |
| 04 | 60 | 40 |
| 05 | 60 | 30 |
| 06 | 30 | 50 |
| 07 | 20 | 50 |
| 08 | 40 | 30 |
| 09 | 60 | 20 |
| 10 | 30 | 50 |
| 11 | 40 | 30 |
| 12 | 40 | 30 |
| 13 | 50 | 40 |
| 14 | 50 | 30 |
| 15 | 80 | 40 |
| 16 | 70 | 40 |
| 17 | 30 | 70 |
| 18 | 20 | 60 |
| 19 | 60 | 30 |
| 20 | 80 | 80 |
| 21 | 80 | 40 |
| 22 | 50 | 70 |
| 23 | 40 | 60 |
| 24 | 30 | 50 |
| 25 | 60 | 50 |
| 26 | 30 | 40 |
| 27 | 40 | 50 |
| N = 28 | 10 | 30 |
| N = 28 | $\sum X = 1320$ | $\sum X = 1280$ |
| Mean | $\bar{X} = 47.14 \% \approx 47 \%$ | $\bar{X} = 45.71 \% \approx 46 \%$ |

Table 6: Reading Comprehension Posttest Scores and Means

From tables (5 and 6) we have noticed that the control group has scored a mean of 103 words per minute in reading speed, whereas the experimental group has scored 131 words per minute. As far as reading comprehension is concerned, the former has marked 47 %, while the latter has marked 46 %.

Taking into account the scores distribution of both reading speed and reading comprehension, as mentioned in the figures (4 and 5) below, one may find the following categories:

Considering reading speed scores distribution, we have found four categories: two for the control group and two for the experimental group. As shown in figure 4 below, the first category in the control group constitutes 46.42 %. It represents the participants whose reading speed is lower than 100 words per minute (below the average). The second category in the same group is about 53.57 % and represents those who read more than 100 words per minute (speed above the average). We notice that these two categories are approximate in terms of percentage (46.43 % versus 53.57 %). The experimental group also contains two main categories. The first category is very small in terms of percentage. It is about 7.14 % and constitutes the participants who read less than 100 words per minutes. The second category, however, represents the largest share of the experimental group who read more than 100w/m and constitutes 92.85 %.

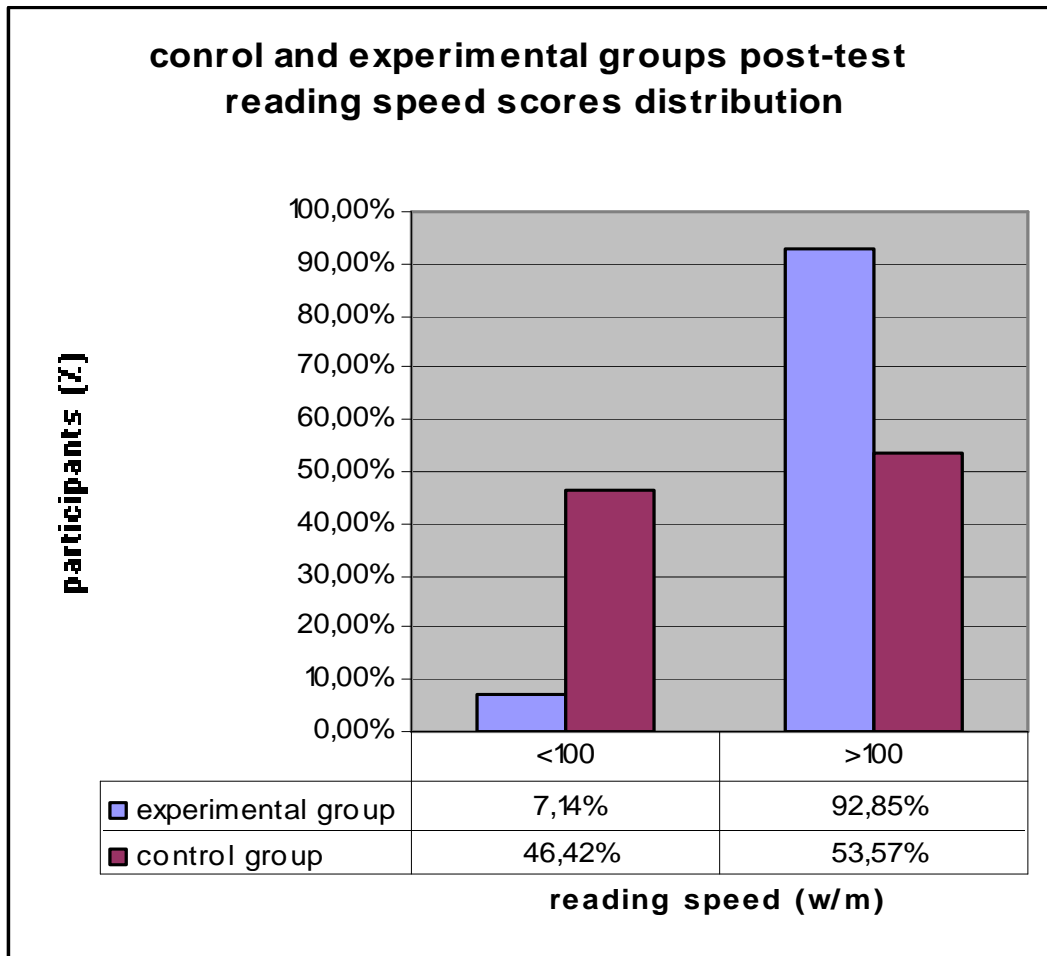


Figure 4: Control and Experimental Groups Posttest Reading Speed Scores Distribution

In the scores distribution of reading comprehension, as shown in figure 5 below, we have distinguished three categories in the control group and three categories in the experimental one. The first category of participants who scored less than 50% in reading comprehension (below the average comprehension) equals the percentage of 46.42 % in the control group and half of the experimental group, i.e., 50 %. Those whose reading comprehension scores fall between 50 % and 70 % (above the average and acceptable level of comprehension) constitute 42.85 % of the control group and 46.42 % of the experimental one. The first two categories are approximate in terms of scores and percentage between the two groups. The last share of participants represents those who

score more than 70 % (good level of comprehension). It constitutes 10.71 % of the control group and 3.57 % of the experimental one.

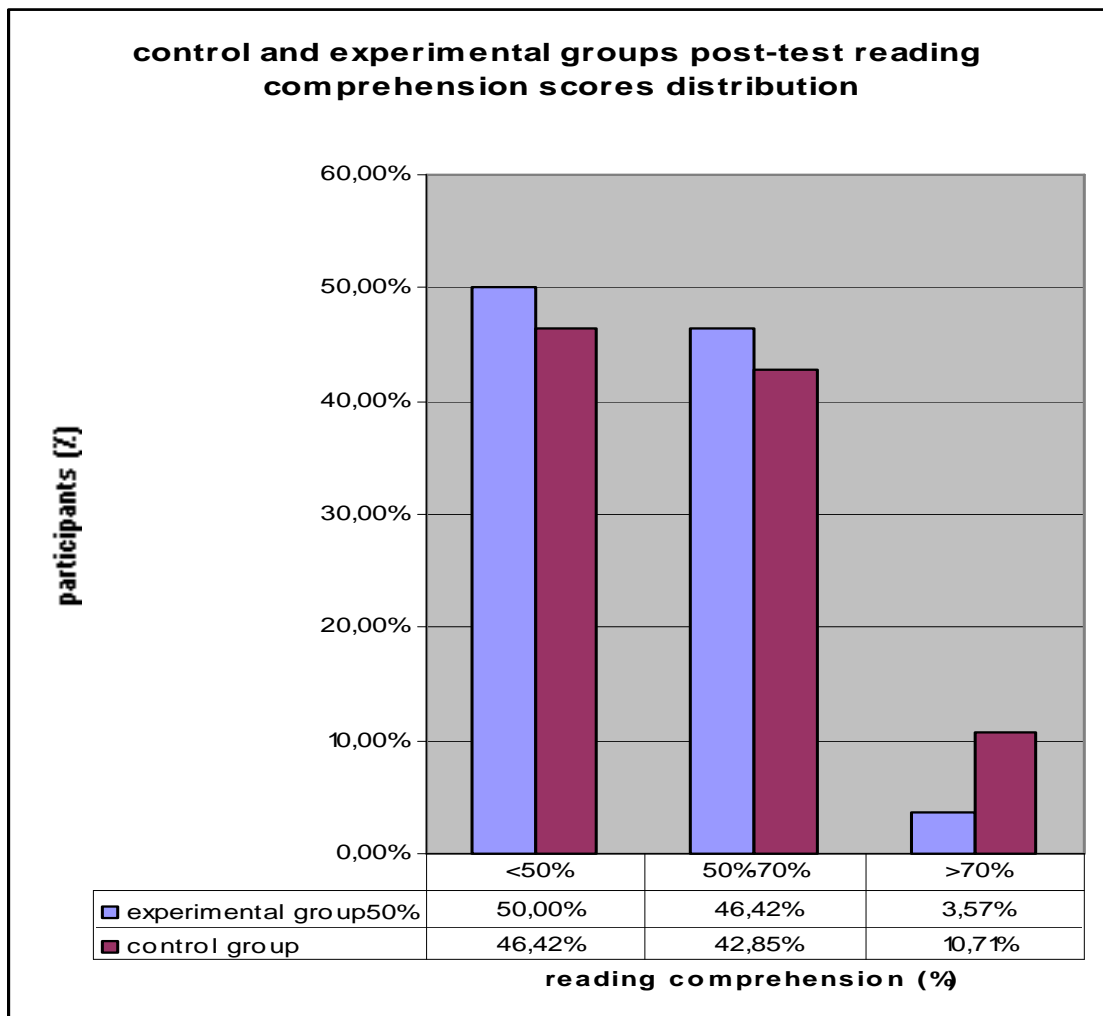


Figure 5: Control and Experimental Groups Posttest Reading Comprehension Scores Distribution

4.4 Data Analysis: Comparison of Results and Means

After collecting the data of the pre and post test, the scores will help us to provide a statistical analysis. The latter is going to be divided into three parts. First, the comparison of the pre and post test means of reading speed and reading comprehension of the control and experimental groups. Second, two statistical tests are followed; the t- test and the

correlation coefficient (r). Both of them will determine the validity of these results and then would consequently confirm or disconfirm our hypothesis.

4.4.1 Results

Figures 6 and 7 below show the pretest performance of the control and experimental groups in reading speed and comprehension. By observing these graphs, one can notice that the achievement of both treatment groups in the pretest is approximately the same. This means that the participants depart for the experiment with equivalent levels in reading speed and comprehension.

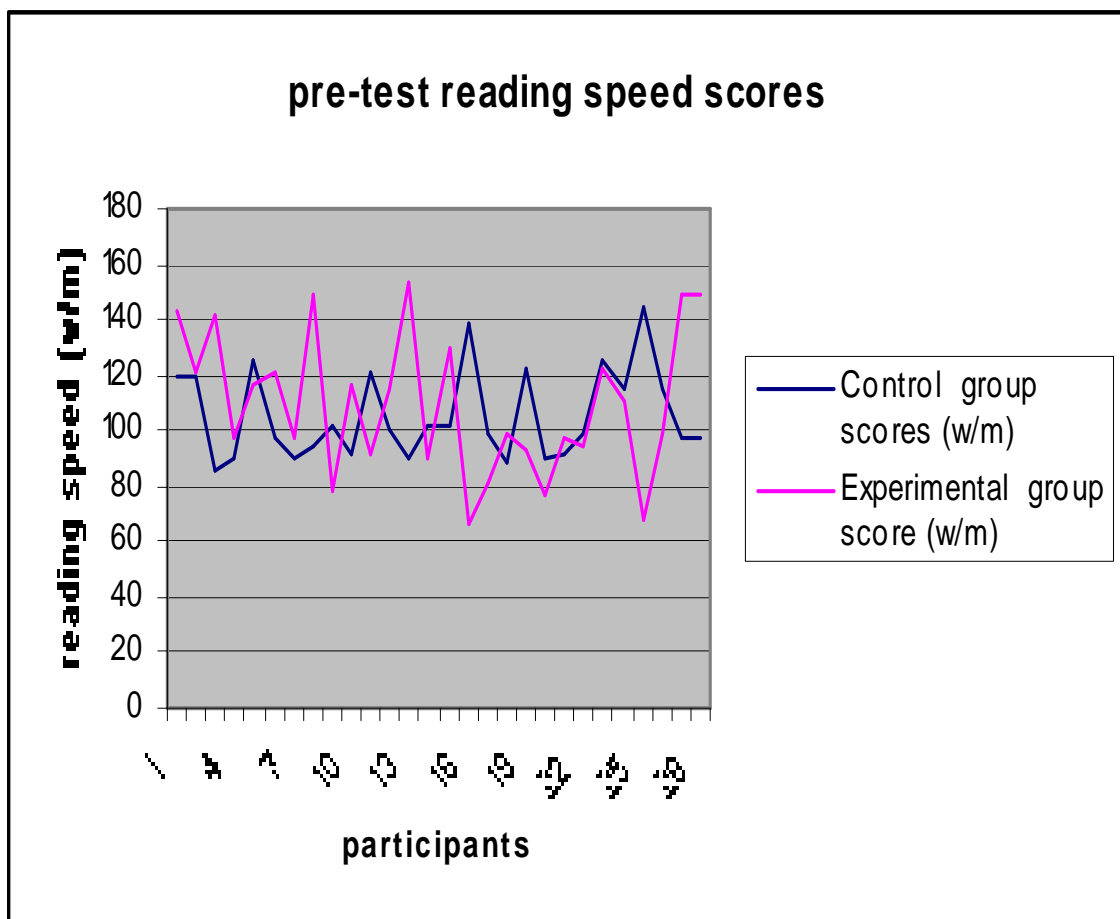


Figure 6: Pretest Reading Speed Scores

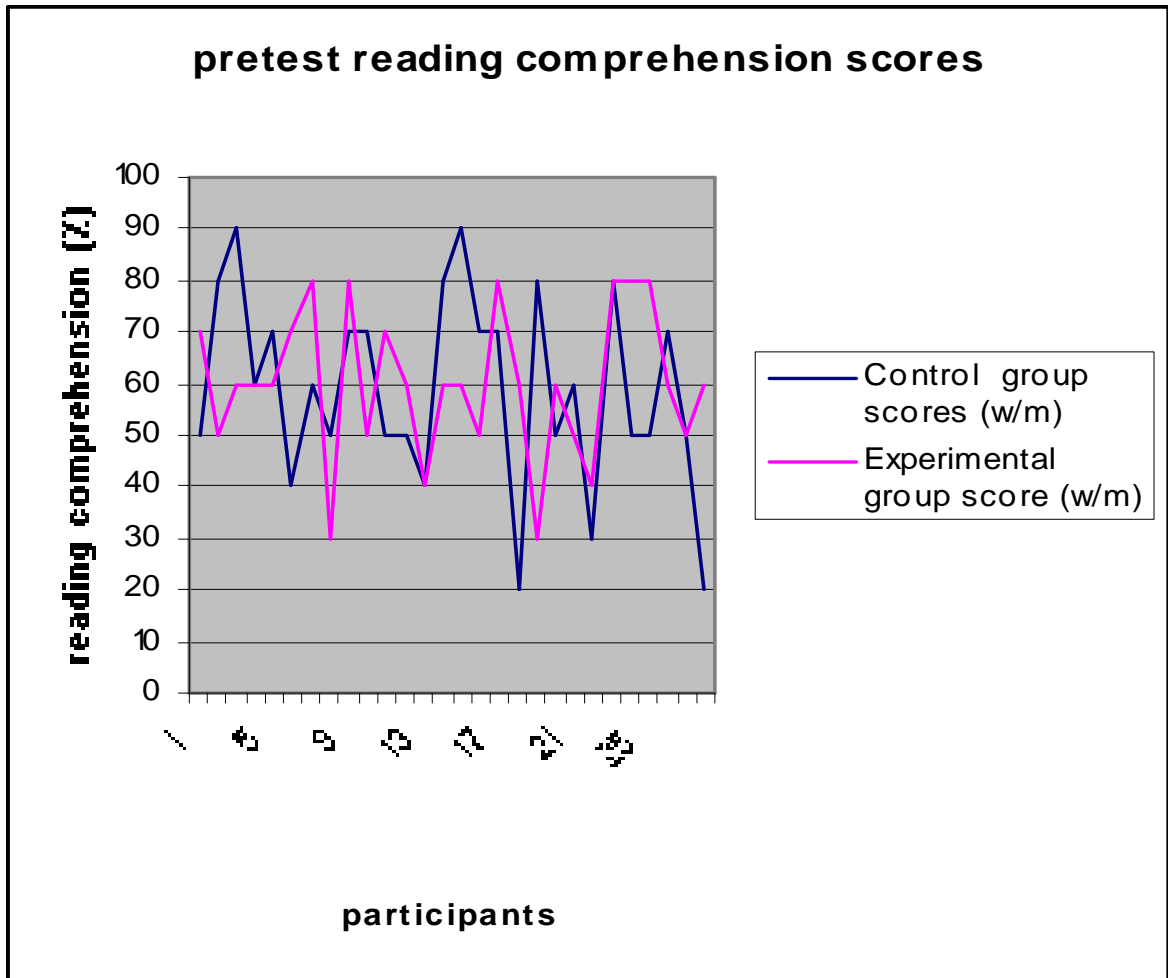


Figure 7: Pretest Reading Comprehension Scores

At the end of the experiment, both control and experimental groups are tested again. After the examination of the posttest results, we notice a significant difference between the control and experimental groups in terms of their reading speed results. However, their reading comprehension results remain approximately the same, as shown in figures 8 and 9 below.

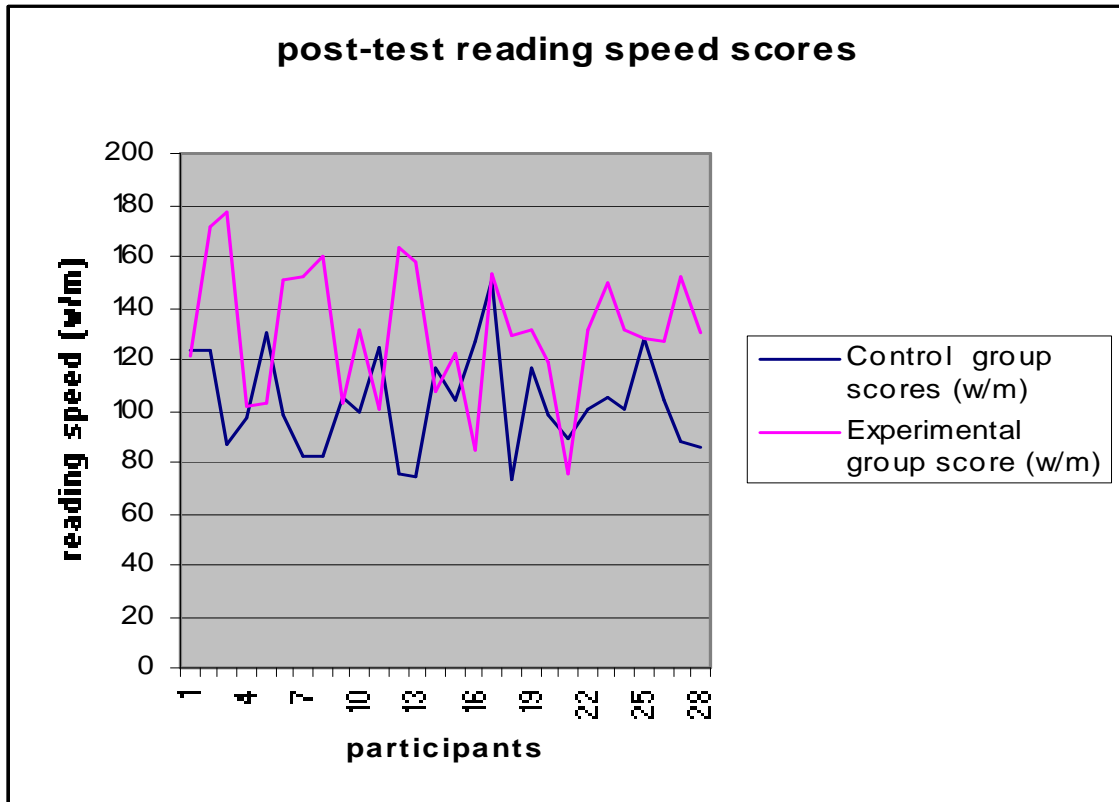


Figure 8: Posttest Reading Speed Scores

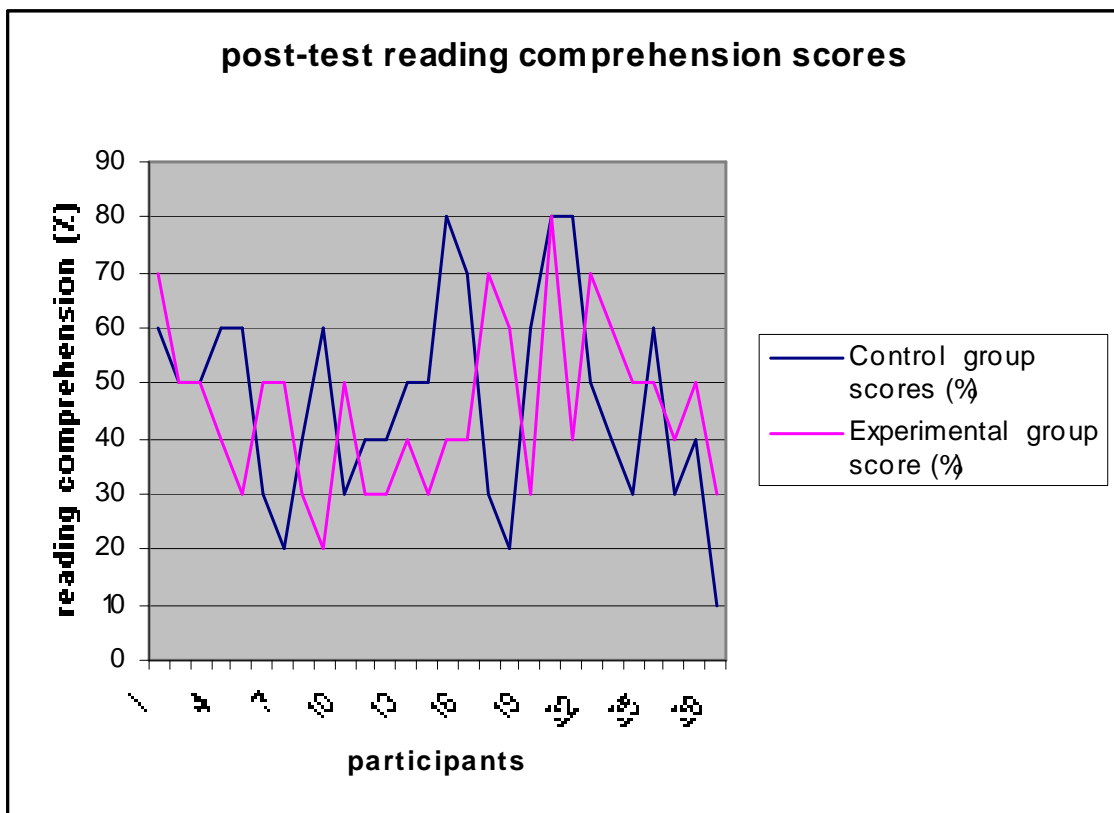


Figure 9: Posttest Reading Comprehension Scores

4.4.2 Comparison of Means

To be more precise about the differences in posttest reading speed results and similarities in pre and post tests reading comprehension scores between the control and the experimental groups, we have opted for the comparison of the means of both reading speed and reading comprehension.

The means have been calculated in the previous sections. Table 6 below summarizes the means of reading speed and reading comprehension of the control and experimental groups in the posttest.

| | Control Group | Experimental Group |
|---------------------------------------|---------------|--------------------|
| The Mean in Reading Speed (w/m) | 103 | 131 |
| The Mean in Reading Comprehension (%) | 47% | 46% |

Table 7: Experimental Group Posttest Means of Reading Speed and Reading Comprehension

Table 8 below sums up the means of reading speed and reading comprehension of the control and experimental groups obtained in the pretest and posttest.

| | Pretest Means | | Posttest Means | |
|---------------------------------------|---------------|--------------------|----------------|--------------------|
| | Control Group | Experimental Group | Control Group | Experimental Group |
| The Mean in Reading Speed (w/m) | 106 | 109 | 103 | 131 |
| The Mean in Reading Comprehension (%) | 59% | 60% | 47% | 46% |

Table 8: Pre and Post tests Means of Reading Speed and Reading Comprehension

By comparing the means of both treatment groups in reading speed and reading comprehension in the posttest, we have noticed the following:

In terms of reading speed, we may easily deduce that the experimental group outperformed the control group (table 7). From table 8, we notice a slight difference between the means of the control and experimental groups in the pretest. They have nearly the same speed. Only three words per minute difference; however, a difference of 28 words per minute was reached in the posttest (table 8). This explains that the experimental group has shown a progress in reading speed which is not the case of the control group.

Concerning reading comprehension, we have noticed that the control and experimental groups have shown a similar performance in pretest and posttest. From table 8, we may remark a negligible difference between the two groups in the pretest (59 % \neq 60 %). This slight difference which equals 1% remains the same in the posttest (47 % \neq 46 %) as shown in table 8. This means that the experimental group has shown a constant level of reading comprehension in the posttest.

The comparison of the means is not so decent for building firm decisions on the authenticity of the hypothesis postulated in this study. To reinforce the conclusion drawn from this comparison and to give it more validity, making recourse to the t-test analysis is worthwhile.

4.5 The t-Test Analysis

Brown (1988, 127) states that the selection of the appropriate statistics in an experimental study depends fundamentally on (a) the number of groups involved, (b) the types of scales used, and (c) the size of the sample.

The t-test is used to assess the mean difference between two groups. It is selected in this study for a number of reasons. First, the t-test is widely used in language studies (Brown, *ibid.* 165). Second, it is applied regardless of the size of samples as opposed to the z test which requires large cross-sections. Third, our hypothetical study describes two variables each of them is an interval scale (reading speed scores and reading comprehension scores) and seeks to compare the results of two independent groups (control and experimental group).

To calculate the t value, we apply the following formula.

$$t_{N_1+N_2-2} = \frac{(\bar{X}_1 - \bar{X}_2)\sqrt{(N_1 + N_2 - 2)N_1N_2}}{\sqrt{(N_1S_1^2 + N_2S_2^2)(N_1 + N_2)}}$$

\bar{X}_1 → Mean of the first group

\bar{X}_2 → Mean of the second group

N_1 → Number of the participants of the first group

N_2 → Number of the participants of the second group

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

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

The Sample Variance is a sort of average of the differences of all scores from the mean.

4.5.1 t-Test for Reading Speed difference between the CG and the EG in the Posttest

We are still concerned with the null hypothesis and other possible outcomes for our study in the form of an alternative hypothesis.

Null Hypothesis

There is no significant difference between reading speed means for the experimental and control groups. That is to say, $H_0 : \bar{X}_E = \bar{X}_C$

Alternative Hypothesis

The experimental group's reading speed mean is higher than that of the control group. That is to say, $H_0 : \bar{X}_E > \bar{X}_C$

Control Group

$$\sum X_1 = 2891$$

$$\sum X_1^2 = 30883$$

$$\bar{X}_1 = \frac{\sum X_1}{N_1} = \frac{2891}{28}$$

$$\bar{X}_1 = 103$$

Experimental Group

$$\sum X_2^2 = 3668$$

$$\sum X_2 = 497932$$

$$\bar{X}_2 = \frac{\sum X_2}{N_2} = \frac{3668}{28}$$

$$\bar{X}_2 = 131$$

The Sample Variance (Standard Deviation).

Control Group

$$S_1^2 = \frac{\sum X_1^2}{N_1} - \bar{X}_1^2$$

$$S_1^2 = \frac{30883}{28} - 10609$$

$$S_1^2 = 11031.53 - 10609$$

$$S_1^2 = 422.53$$

Experimental Group

$$S_2^2 = \frac{\sum X_2^2}{N_2} - \bar{X}_2^2$$

$$S_2^2 = \frac{497932}{28} - 17161$$

$$S_2^2 = 17783.28 - 17161$$

$$S_2^2 = 622.28$$

Nb. The data used to calculate the t value for reading speed difference between the EG and CG are summarized in a table available in appendix H

The t Value for Reading Speed

$$t_{N_1+N_2-2} = \frac{(\bar{X}_1 - \bar{X}_2)\sqrt{(N_1 + N_2 - 2)N_1N_2}}{\sqrt{(N_1S_1^2 + N_2S_2^2)(N_1 + N_2)}}$$

$$t_{56+56-2} = \frac{(103 - 131)\sqrt{(56 + 56 - 2)(56)(56)}}{\sqrt{[(28)(422.53) + (28)(622.28)(56)]}}$$

$$t_{54} = \frac{-5761}{1279.94}$$

$$t_{54} = -4.50$$

The negative sign (-) of the t value is not regarded. This value is negative because the first mean is smaller than the second one. As the t value is considered positive when compared with the tabulated t , it is reported as the absolute value rather than the signed value of the statistics.

Statistical Conclusion

With our one directional hypothesis, we predicted that the experimental group's reading speed mean would be higher than that of the control group. At 0.05 level of significance, with 54 degrees of freedom, the critical value for the t obtained is 1.67. Because the value

of our calculated t exceeds the tabulated t ($4.50 > 1.67$), we reject the null hypothesis. Therefore, the difference between the two means of reading speed posttest for the control and experimental groups is highly significant.

Pedagogical Conclusion

In this empirical study, the implementation of paced-reading exercises provides good results in improving students' reading speed. Consequently, our hypothesis which speculates that paced-reading exercises are effective for improving reading speed of first year LMD students at Mentouri University of Constantine is significantly corroborated.

4.5.2 t-Test for reading comprehension Difference between the CG and EG in the Posttest

Null Hypothesis

There is no significant difference between the reading comprehension means for the experimental and control groups; that is to say, $H_0 : \bar{X}_E = \bar{X}_C$

Control Group

$$\begin{aligned}\sum X_1 &= 264 \\ \sum X_1^2 &= 2912 \\ \bar{X}_1 &= \frac{\sum X_1}{N_1} = \frac{264}{28} \\ \bar{X}_1 &= 9.42\end{aligned}$$

Experimental Group

$$\begin{aligned}\sum X_2 &= 256 \\ \sum X_2^2 &= 2584 \\ \bar{X}_2 &= \frac{\sum X_1}{N_1} = \frac{256}{28} \\ \bar{X}_2 &= 9.14\end{aligned}$$

The Sample Variance (Standard Deviation)

Control Group

$$S_1^2 = \frac{\sum X_1^2}{N_1} - \bar{X}_1^2$$

$$S_1^2 = \frac{2912}{28} - 88.73$$

$$S_1^2 = 104 - 88.73$$

$$S_1^2 = 15.27$$

Experimental Group

$$S_2^2 = \frac{\sum X_2^2}{N_2} - \bar{X}_2^2$$

$$S_2^2 = \frac{2584}{28} - 183.53$$

$$S_2^2 = 92.28 - 83.53$$

$$S_2^2 = 8.75$$

The t Value for Reading Comprehension

$$t_{N_1+N_2-2} = \frac{(\bar{X}_1 - \bar{X}_2)\sqrt{(N_1 + N_2 - 2)N_1N_2}}{\sqrt{(N_1S_1^2 + N_2S_2^2)(N_1 + N_2)}}$$

$$t_{56+56-2} = \frac{(9.42 - 9.14)\sqrt{(56 + 56 - 2)(56 \times 56)}}{\sqrt{[(28)(.15.27) + (28)(8.75)(56)]}}$$

$$t_{54} = \frac{57.61}{194.07}$$

$$t_{54} = 0.29$$

Nb. The data used to calculate the *t* value for reading comprehension difference between the EG and CG are summarized in a table available in appendix I

Statistical Conclusion

With our one directional hypothesis, we predicted that there would be no significant difference between the experimental and control groups reading comprehension means. At 0.05 level of significance, with 54 degrees of freedom, the critical value for the obtained t is 0.29. Because the value of our calculated t is inferior to the tabulated t ($0.29 < 1.67$), we accept the null hypothesis. Therefore, the difference between the two means of reading comprehension in the posttest for the control and experimental groups is not significant.

Pedagogical Conclusion

The two groups are equivalent; they have the same level in reading comprehension. Consequently, our hypothesis which speculates that paced-reading exercises are effective for improving reading speed without an accompanying decrease in reading comprehension is significantly corroborated.

Overall t -Test Analysis

The analysis of the pretest correlation results reveals a moderate association between reading speed and reading comprehension. The correlation between these two variables is not linear, and the knowledge of a student's reading speed scores would not help us to affect predictions on his reading comprehension scores. In fact, the t-test results' analysis confirms the results obtained in the correlation. On the one hand, the t-test results are significant in terms of reading speed ($t=4.5$); that is to say, the students have shown a great improvement. On the other hand, the t-test results are not significant concerning reading comprehension ($t=0.29$). This justifies the students' constant reading comprehension level from the pretest to the posttest. This further explains that a systematic increase in reading speed scores is not accompanied by a systematic increase in reading comprehension and confirms the moderate association between them.

4.6 The Correlation between Reading Speed and Reading Comprehension of the CG and EG in the Posttest

At the end of the experiment, and after the posttest, the attained results have prompted other questions to be answered in this study.

(1) Would the relationship between reading speed and reading comprehension remain the same in the posttest as in the pretest or would it be different?

(2) Would this relationship be influenced by reading speed improvement marked at the end of the treatment?

A posttest correlation between reading speed and comprehension has been conducted to answer these questions.

After the computation of the posttest correlation coefficient "r" between reading speed and reading comprehension, we have obtained a coefficient "r" that equals 0.18 (see Appendix J) which is exactly the same as the coefficient "r" obtained in the pretest correlation. With our one tailed test (directional test), at 0.05 level of significance, with 54 degrees of freedom, the critical value "r" is 0.22. Since the value of "r" obtained ($r=0.18$) is very approximate to this required value, there exists a moderate degree of positive relationship between reading speed and comprehension scores. The results are demonstrated in the following scatter diagram which is very similar to the one obtained in the pretest correlation (see figure: 1)

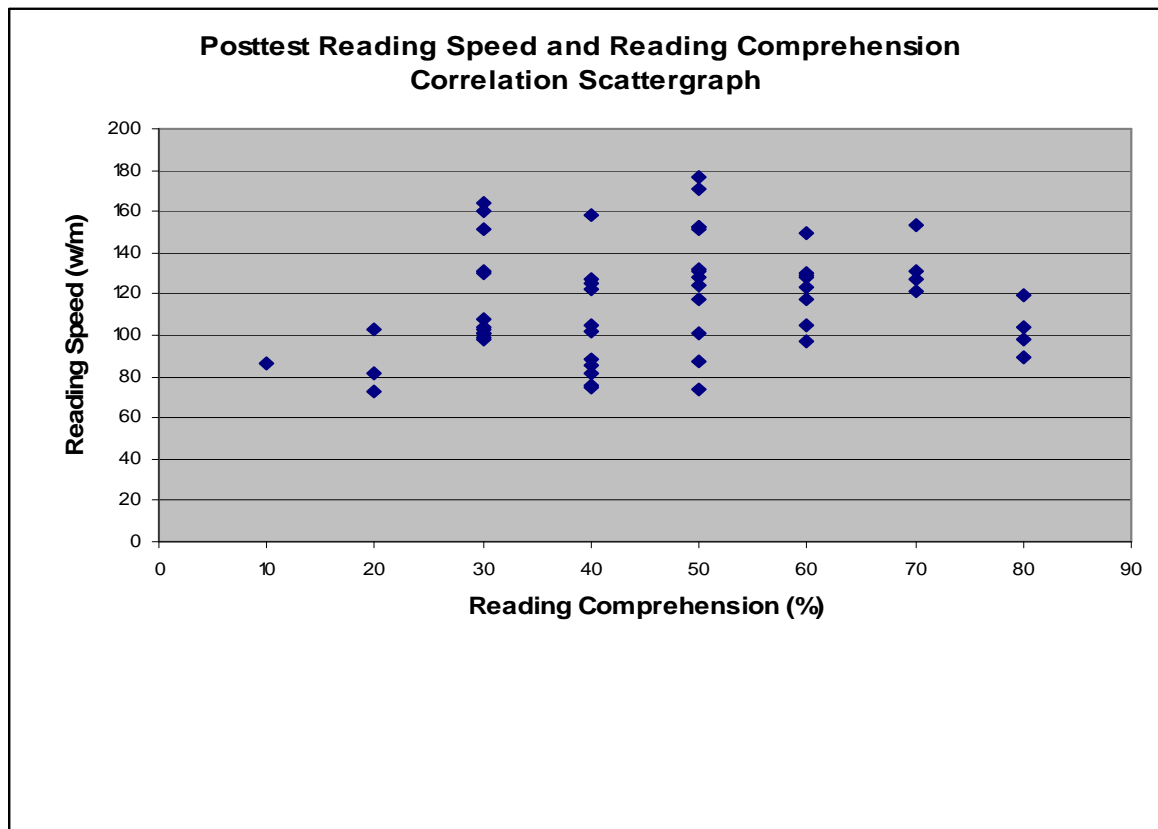


Figure 10: Posttest Reading Speed and Reading Comprehension Correlation

Each point of this scatter graph in figure 10 above indicates the score of one participant in both reading speed (on the vertical axis) and reading comprehension (on the horizontal axis). With an analysis of the above graph, we notice that the group of points is diagonal to a certain extent. This indicates that the systematic increase in the scores obtained in reading speed is not systematically accompanied by an increase in reading comprehension scores. Consequently, the correlation between the students' reading speed and reading comprehension is not strong; it is rather moderate.

One can state that the correlation between reading speed and comprehension in the posttest is similar to the one obtained in the pretest; that is to say, their relationship has not been affected by the treatment.

4.7 Results and Discussion

Before indulging in the treatment, a pretest was administered to evaluate the participants' reading speed and reading comprehension. In terms of the pretest results, the experimental and control groups revealed equivalent averages in both reading speed (106 \neq 109 w/m) and reading comprehension (59% \neq 60 %). The pretest results have served us two aims: first, to be confident that both groups share similar levels in reading speed and reading comprehension before embarking upon the treatment. Second, to set a push speed or a pacing speed during the treatment; That is to say, it is on the basis of the calculation of the participants' means of reading speed (the mean speed of both experimental and control groups is 107w/m) that one has decided to establish 150 w/m as the pacing speed during the treatment and which the experimental group would attain at the end of the treatment.

After the treatment period, a posttest identical to the pretest, regarding the text length, text difficulty, and comprehension questions, has been delivered to test the participants' reading speed and reading comprehension. At this level, two main results are obtained. Firstly, the experimental group outperformed the control group as far as reading speed is concerned (131 \neq 103). This group of participants increased their reading speed from 109w/m in the pretest to 131w/m in the posttest. In other words, they read 28w/m faster than the control group participants who read at 103w/m. Secondly; both treatment groups exhibited the same level in reading comprehension (47% \neq 46%).

We may explain this by saying that unlike the control group participants read at 103w/m and gain 47% amount of comprehension, the participants in the experimental group succeed to gain the same level of comprehension 46% spending a shorter time in reading. In other words, the control group participants read slowly at 103w/m and hence spend a longer time when they read.

As far as the experimental group' reading speed improvement is concerned, 23 participants out of 28 (or 82.14% of the group) have increased their reading speed , Only 5 participants or 17.85% of the group have marked a decrease (figures 11 and 12 below).

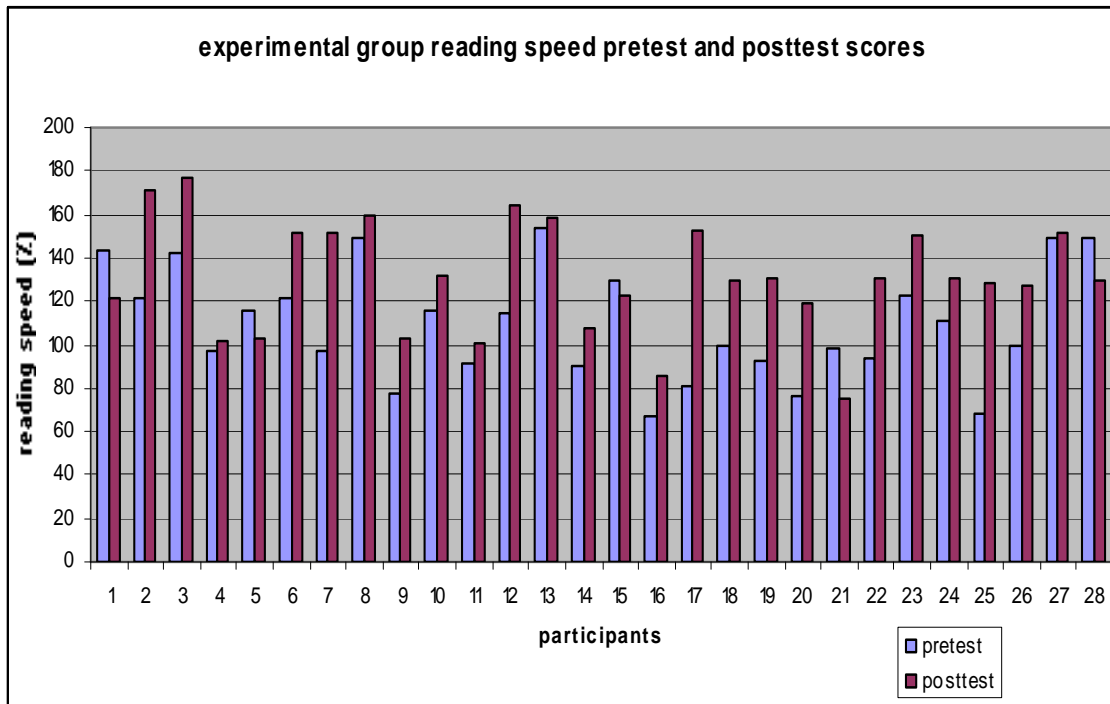


Figure 11: Experimental Group Participants' Reading Speed Pretest and Posttest Scores

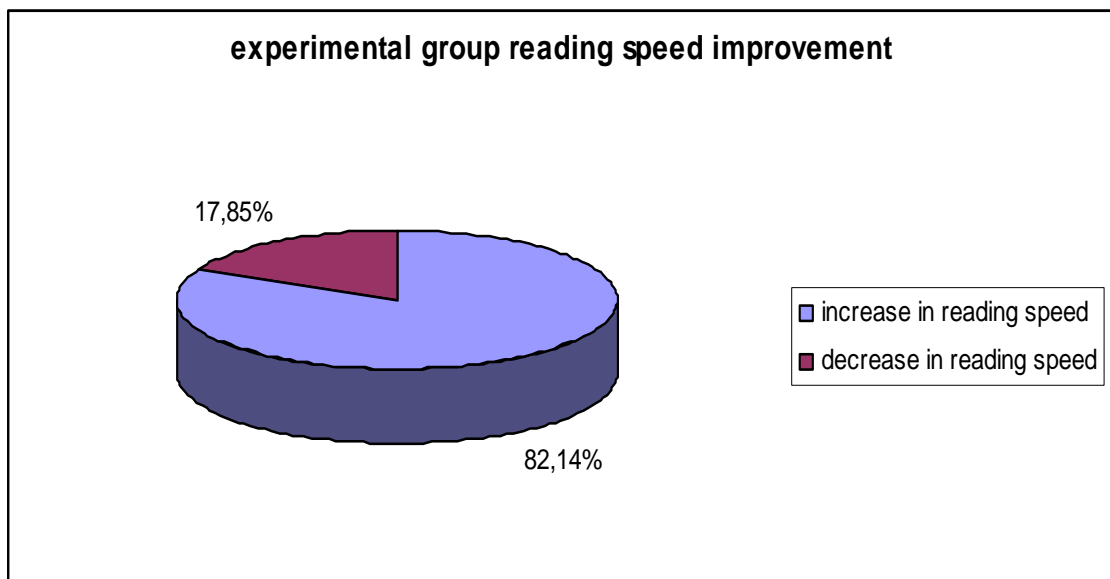


Figure 12: Experimental Group Reading Speed Improvement

Among the 82.14% who have improved their reading speed, there are participants who have reached 177w/m speed. This increase, in fact, equals 28w/m and exceeds our push speed or pacing speed (150w/m) set at the beginning of the study. Moreover, this improvement is above 50% if we consider the mean speed of the experimental group prior the experiment (109w/m).

Our analysis of the experimental group reading speed posttest results, as shown in figure 13 below, reveals three main categories. The first category represents those whose reading speed improvement has reached our speed goal (150w/m). It constitutes 42.85%. The second category corresponds to those whose reading speed surpasses 150w/m to reach 177w/m and which equals 32.14%. Nevertheless, about 25% of the experimental group still read less than 110w/m; that is to say, a quarter of the experimental group participants have not demonstrated any improvement. This last category requires extensive training in paced-reading exercises to enhance their reading speed.

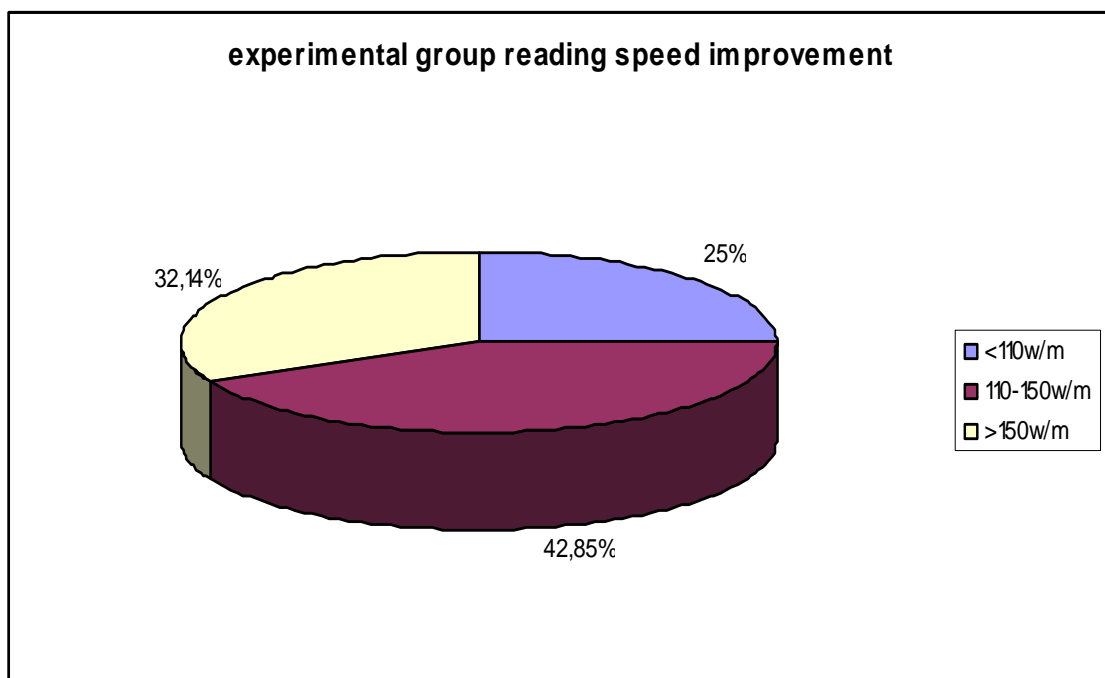


Figure 13: Experimental Group Reading Comprehension Improvement

Considering the experimental group' reading comprehension evolution, we have noticed a decrease in reading comprehension mean from 60% in the pretest to 46% in the posttest (figure 14 below). In other words, this mean diminished from above the average to approximately an average comprehension level. But, if we compare the experimental group to the control one in terms of the posttest results, we notice that both treatment groups have revealed equal reading comprehension levels (47% ≠ 46%). This denotes that in addition to the experimental group' reading speed improvement (i.e., they become able to read faster); their reading comprehension level has not decreased.

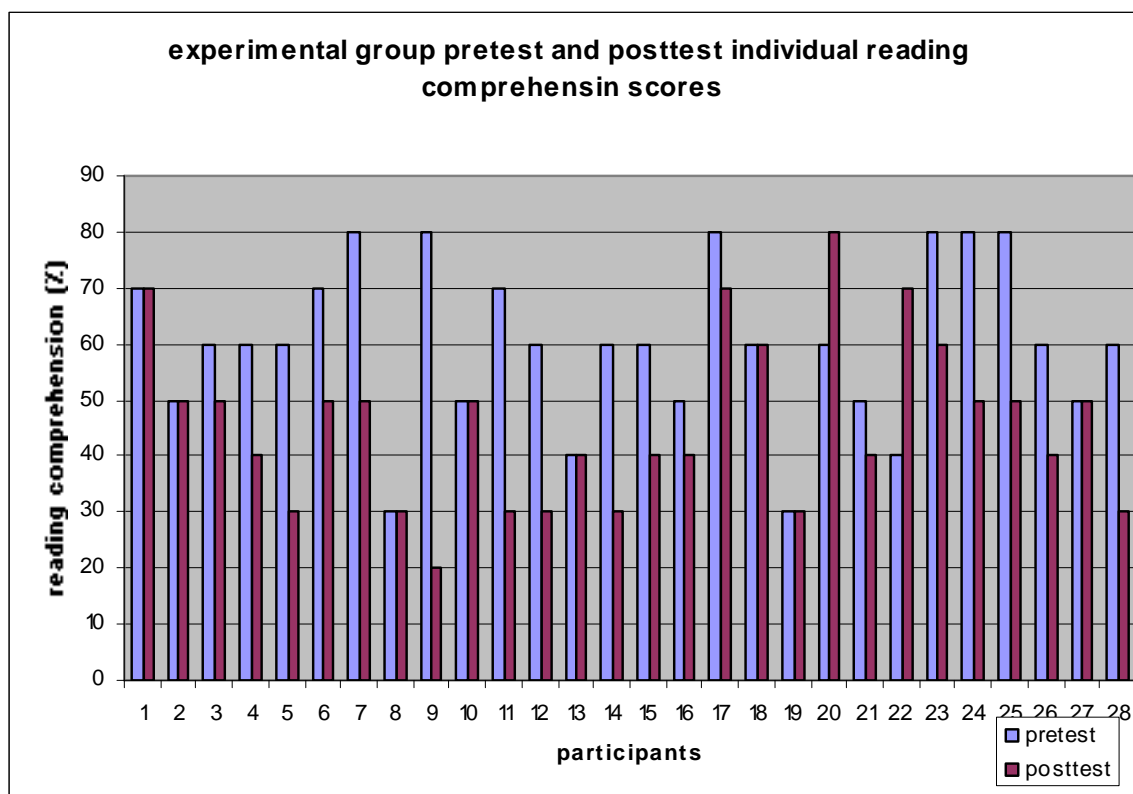


Figure 14: Experimental Group Pretest and Posttest Individual Reading Comprehension Scores

The experimental group posttest results show two main subgroups. One half of this group (50%) constitutes the students whose reading comprehension falls below 50% (see figure 15 below). These subgroup participants tend to read at 110w/m. The other half of the

experimental group represents the participants whose reading comprehension falls between 50% and 70% and whose reading speed reaches 154w/m (figure 13). The latter subgroup who has constituted 60.71% of the experimental group and has scored an average reading speed of 107w/m in the pretest, constituted half (50%) of the experimental group and has attained a mean speed of 154 w/m in the posttest. In fact, these participants have managed to increase their reading speed from 107w/m in the pretest to 154w/m in the posttest. In other words, they have gained 47w/m which equals to 50% increase in reading speed. Besides this, they have succeeded to preserve an acceptable level of reading comprehension (50%-70%). There are even two participants who have been able to improve both reading speed and reading comprehension. One participant has increased his reading speed from 76w/m to 119w/m and his reading comprehension from 60% to 80%; another one has increased his reading speed from 94w/m into 131w/m and his reading comprehension from 40% to 70%.

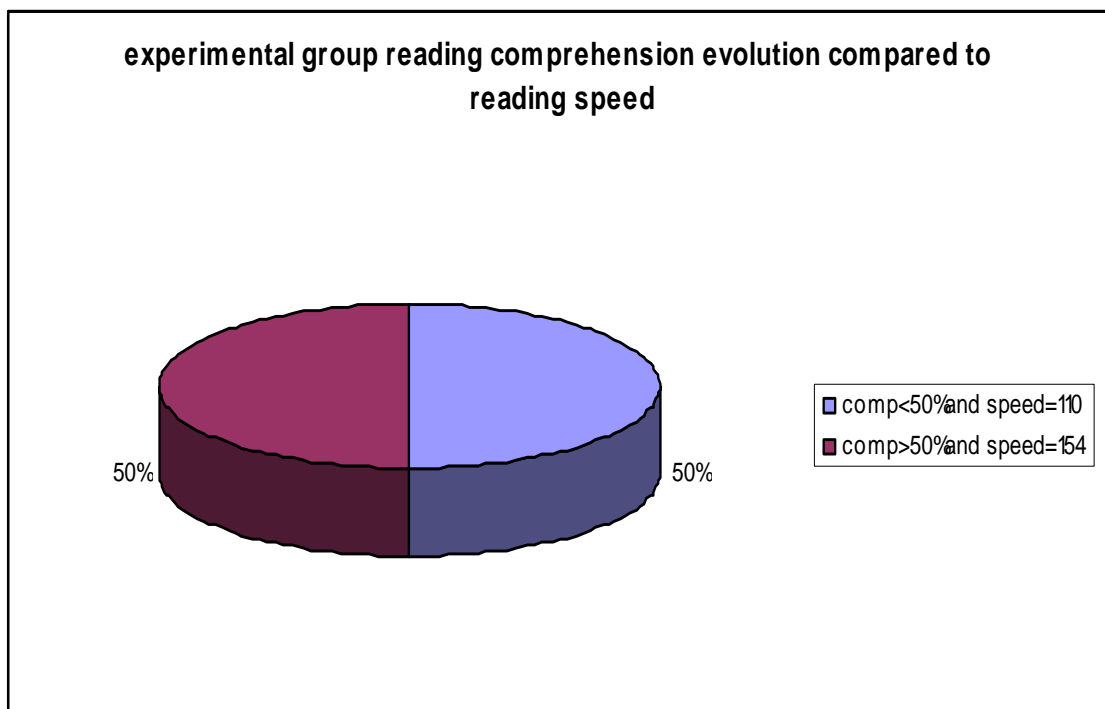


Figure 15: Experimental Group Reading Comprehension Evolution Compared to Reading Speed

Conclusion

The current study seeks to create a balance between reading speed and reading comprehension rather than improving speed at the expense of comprehension. The results obtained in the field work reveal two major findings: firstly, reading speed has been enhanced through practicing paced reading, and secondly, reading comprehension has been maintained. Hence, the study hypothesis is confirmed. Still, more ambitious gains concerning reading comprehension could be attained in future research.

CHAPTER FIVE: PEDAGOGICAL IMPLICATIONS

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CHAPTER FIVE

PEDAGOGICAL IMPLICATIONS

Introduction

This chapter sets the different conclusions drawn from the current study and compares the obtained results with those attained by previous researches. It also highlights some pedagogical implications to the teaching of reading by stressing the significance of reading speed as being a tool for assessing students' overall reading performance. Moreover, this chapter puts forward the limitations of the study and provides some suggestions for future research.

5.1 Consistency with Past Research

The current study is set to serve two intended purposes. First, to investigate the degree of association between reading speed and reading comprehension, second, to explore the effect of adopting a rapid reading programme in an EFL reading course on students' reading speed and reading comprehension, especially that empirical studies related to this issue are very few (Anderson, 1983; Coady and Anderson, 1993; Cushig Weigle and Jensen, 1996; Mahon, 1986; in Anderson, 1999:1; Carrell and Grabe, 2002: 242; Fraser, 2004: 136)

The earliest empirical studies carried out with English native speakers have shown that rapid reading programmes consisted of only skimming and scanning strategies used to help learners to read faster (Brown, Barrus, and Hansen 1981; in Anderson, 1999: 2). These strategies did not succeed to recognize the significance of changing one's reading speed according to his reading purpose and cause readers to have lower levels of reading comprehension (Bell, online pages). Later studies conducted in native language settings,

however, indicated that readers attained rapid reading skills, in addition to better reading comprehension after being taught rapid reading techniques (Cramney, *et. al.*, 1982; in Anderson, 1999: 2).

As far as English as a Second/Foreign Language field of investigation, very few empirical studies have been carried out to examine the effects of rapid reading instruction for L2/FL learners (Anderson 1983; Coady and Anderson 1993; Cushing, *et. al.*, 1996; Mahon 1986; in Anderson 1999: 1). Carrel and Grabe (2002: 242) being in accordance with the previous researchers state that there are few published studies on the relationship between reading rate development or training and FL/SL reading comprehension. Therefore, it might be worthwhile for EFL teachers to experiment with several activities and study the relationship. Being in the same line, Fraser (*op.cit.*, 2004: 137) stresses the fact that this issue is somehow neglected in L2 pedagogy and provides different rate developing techniques taken from (Anderson, 1999) which consist typically of timed and paced-reading activities, eye-movement exercises, strategy instruction and general recommendations for encouraging extensive reading.

Champeau de Lopez (1993) carried out a study in Venezuela. It aims at investigating the effect of rapid reading instruction on Learners reading speed and comprehension. Champeau de Lopez adopted a combination of timed-reading and paced-reading activities. She makes a clear distinction between timed reading in which learners read at their normal pace and then calculate their speed in words per minute, and paced reading where the teacher controls the time allowed for reading and taps on the desk to indicate times when every 100 words would be reached. Her treatment was carried out over 9 weeks, where a series of paced readings were administered. This treatment period was preceded by a

pretest in which a timed reading of about 1000 words was administered and followed by posttest where an identical timed reading was delivered.

Champeau de Lopez uses the results of the pretest timed-reading to calculate the students' average reading speed which is 120w/m. On this basis, she decided to push for 150w/m. She used True / False questions as a tool to evaluate their reading comprehension. As far as the passages used for practice, she prepared her own relying on articles and magazines and introductory textbooks. She increased the length of texts gradually and kept a constant reading speed throughout the treatment.

In terms of the obtained results, she found out that students increased their reading speed on average from 120 to 170 words per minute (a 50% increase). She also noted a slight drop in reading comprehension over the same period, from 78% to 67%. One student went from 105w/m to 189 w/m and also increased comprehension from 70% to 80%.

As far as the current study is concerned, we have followed exactly the same steps adopted by Champeau de Lopez (1993) in her study. But, in addition to the combination of timed and paced readings, we have added other reading strategies instruction; namely skimming, scanning, and prediction from the title. By including these strategies in our study, we aim at a strategic application of a timed reading programme.

Comparing the results obtained in the present study to those of Champeau de Lopez (1993), we have marked an increase equal to 20.18 % in reading speed and a decrease in reading comprehension from 60 % to 46 %. However, reading comprehension of the experimental and control groups have equaled off in the posttest. This confirms the research carried by Coady and Anderson (1993) from which they conclude that it is possible to enhance reading speed in an L2 without an accompanying decrease in reading comprehension (Anderson, *op.cit.*, 1999: 2). We have also noticed that two students have

improved both reading speed and reading comprehension. One participant went from 76w/m to 119 w/m and also increased comprehension from 60 % to 80 %; the other one has increased his reading speed from 94w/m to 131w/m and his comprehension from 40 % to 70 %.

Lai (1993), in a study carried out on students in Hong Kong secondary schools, found that although subjects' gains in reading speed were significant, gains in reading comprehension were not (Lai, 1993; in Bell, 2001: online pages). According to Bell (2001, online pages) many reviewed studies seem to suggest that gains in reading speed may be easier to accomplish than advances in reading comprehension; therefore the former objectives should not be prioritized at the expense of the latter if we wish to serve the interests of ESL/EFL learners in reading development and improvement. Eventually, I strongly agree with Champeau de Lopez when she concludes that with more practice in balancing speed and comprehension, students could even do better.

5.2 Pedagogical Implications

5.2.1 The Significance of Reading Speed Improvement

As reading speed is considered as an indicator of fluent and diffluent reading and a tool for assessing students' reading performance, it is according to it that authentic instructional activities can be included into a reading programme as a remedy for slow reading which is a widely recognized problem faced by learners throughout ESL/EFL world.

One possible implication points out to the need to improve ESL/EFL students' reading speed. In fact, adopting rapid reading programmes may yield in interesting results in developing students reading speed beyond a minimal threshold because it assists them to read beyond the word level and allows them to read in meaningful chunks of thought.

Indeed, class paced readings have proved, in the current study, to be quite effective in serving this aim. They are easy to apply and do not require much time for their implementation. 20 minutes per session are quite enough, especially that EFL students are in need of extensive classroom practice in these activities. Paced reading adopted inside the classroom should be consolidated with self-paced reading at home either by practicing over the same material dealt with in class or choosing another one.

5.2.2 The Necessity of Balancing Reading Speed and Comprehension

The current study seeks to locate the twin issues of reading speed and reading comprehension. It should be noted that although the development of adequate reading speed should receive a high priority in our learning programmes, we should recall, as Nuttall (1982: 37) states that reading speed without comprehension is worthless. Hence, if we want to serve ESL/EFL learners' interests in reading improvement, priority should not be given to the former objective at the expense of the latter; that is to say, students should be continuously encouraged to read at a high speed and maintaining a suitable level of comprehension simultaneously. Students, in fact, struggle to do this at the beginning of the training, but as they get used to paced reading they manage to achieve the two goals progressively.

5.2.3 The Need of Pairing Skimming and Scanning off with Paced Reading

Fraser (2004: 136-137) states that reading courses rarely focus on reading fluency development, apart from previewing, skimming, and scanning exercises. Actually, these strategies would be fruitful if they are intertwined with paced-reading exercises. This is highlighted in this study. Although students in the control group were introduced to the same reading strategies (skimming, scanning, and prediction from the title) as the

experimental group, they have not shown any improvement in terms of reading speed i.e., Their reading speed levels equaled off in both pretest and posttest (106 \neq 103). However, using these strategies hand in hand with paced reading activities provided good results for the experimental group (109 \neq 131). As a matter of fact, it is not enough to introduce students to skimming and scanning strategies to enhance learners' reading fluency without being supported by paced reading. These strategies are rewarding in making students read effectively by matching their reading to their purpose and to be flexible readers. Hence, reading strategies and paced reading activities are very complementary to promote a successful paced-reading programme for enhancing reading speed; but, skimming and scanning alone do not help the students to increase their reading speed.

Nevertheless, students' initiation to different reading strategies depending on the purpose of reading should be emphasized. To this end, teachers should clarify the purpose of reading all the time so that students can use appropriate strategies for reading. Examples of these are skimming (for gist), scanning (for specific information), encouraging students to make predictions when they read, using pre-reading activities to activate students' background knowledge by having them preview the material they are about to read by reading the title, headings, reading the introduction, conclusion and transition words, skipping inessential words, guessing from context...etc

5.3 Limitations of the Study

Like any other research work, the current study contains some potential limitations. Some are due to the methods undertaken to conduct it; others are due to the measures adopted for evaluation. A number of important limitations to our findings need to be highlighted.

The first limitation is related to the number of subjects on which these results are obtained. A total of 56 participants across the two groups is small if it is compared to the total number of the whole population (approximately 700). Indeed, the nature of the current study requires considerable efforts from the researcher to manage the members of the treatment groups, especially that the participants need individualized attention (in the pre and post tests and during the administration of timed and paced readings). In addition, the researcher needs time and efforts to calculate reading speed and correct comprehension tests for each participant. With a larger group, it would be possible to generalize the findings to the whole population of the study.

A second major limitation is related to the duration of the treatment. Time factor is very important in the present study because developing reading speed would not be achieved overnight. Speed is a skill that needs extensive practice over a fairly long period of time. Furthermore, reading is not made as a separate module but a part of the module of 'Study Skills'. It was possible for us to conduct this study within the scope of time allocated to reading (one month and half period). This short period of time prevented us from extending the treatment period to train students in paced reading. This has led us to resort to extra sessions which added the burden of the lack of empty classrooms and made our mission even more difficult. We will be honest if we say that we sought more ambitious results. With more time, students could have achieved better results.

Another problem faced in this study is adapting or matching the passages' level of difficulty to the students' level. Actually, EFL settings lack textbooks which are graded according to students' levels as in L1 setting where standards are put to match textbooks levels of difficulty to students' grades. To minimize the criterion of text difficulty to a

certain extent, we have relied on reducing lexical difficulty by substituting difficult or unfamiliar words by simpler ones.

It is worth noting that students' reading comprehension fluctuated all over the treatment session. On some later readings, their scores were lower than on earlier ones. This is due to some circumstances such as background knowledge, interest in a particular subject or even distractions such as hunger or noise which could affect their reading rate and comprehension. Psychological factors such as stress, anxiety, and fatigue play an important role in affecting students' reading performance, especially that the treatment was conducted near the end of the academic year where students were preparing for their exams.

5.4 Recommendations for Future Research

Reading Comprehension Assessment

The current study focuses on MCQ and T/F questions to evaluate students' performance because they are objective and easy to score. More than this, MCQ are considered as recognition questions (Deleeuw 1965: 32). In general, students scored better in T/F tests than MCQ questions. This lies in the fact that when students read the passage under time pressure only one time, they may miss some parts of the text and may be caught in the trap of the similar distractors of MCQ. A solution for this is to give students the chance to read MCQ questions before indulging in passage reading. This would give them an idea about the questions and enable them to locate the answers in the text when they read.

5.5 Suggestions for Future Research

The issue of optimal or sufficient reading rate necessary for comprehension of a print to take place has yielded very conflicting views (Anderson, 1999: 2). Higgins and Wallace (1989; in Anderson, *ibid.*) claim that a reading rate that is below 180 w/m is too slow for

efficient comprehension. Dubin and Bycina (1991; in Anderson, *ibid.*) state that 200 w/m is a minimum reading speed for a full understanding of a written print. Jensen being supported by Nuttall recommends 300w/m as the optimal reading speed for SL readers who seek to approach native speakers reading rates (Jensen, 1986, Nuttall, 1996: 56; in Anderson, *ibid.*).

Possible questions related to this issue suggested for future studies may include the following:

1. Is there an optimal reading speed for EFL learners for the processing of a particular text and the extraction of meaning?
2. Is there a threshold below which processing and comprehension become impossible for EFL students?

Another issue suggested for future research is about the role of extensive reading in developing reading speed and comprehension which received much discussion recently. Further research will certainly be needed if we are to eventually understand:

How simplified, high-interest materials contribute to reading speed and reading comprehension enhancement of EFL learners?

Other future investigations may include longitudinal studies on the comparative effects of different methodologies on reading speed and comprehension in a variety of EFL settings such as:

- Comparisons of courses using speed reading methodologies with programmes emphasizing reading in quantity (based on extensive reading).

- Examining extensive reading and intensive reading and comparing their relative effectiveness in developing basic reading speed.

Conclusion

This chapter attempts to provide some pedagogical implications which are felt quite important for reading speed improvement. It also sheds light on the limitations of the current study and provides some recommendations and suggestions for future research.

GENERAL CONCLUSION

The present study aims at casting light on the significance of improving reading speed for EFL students. It has been concerned with investigating the effects of adopting paced-reading activities on first-year LMD students' reading speed and reading comprehension. Furthermore, it has allowed us to examine the nature of the relationship that exists between reading speed and reading comprehension. The study departs from two principal research questions:

- 1) What is the nature of the relationship between reading speed and reading comprehension? Are they independent or correlated factors?
- 2) Would including paced-reading activities in first-year LMD students reading classes to enhance reading speed lead to improving their reading speed without causing an accompanying decrease in reading comprehension?

The act of Reading is described here as the outcome of decoding and comprehension; in the absence of any one of them reading is not achieved. Decoding is very essential because unless readers are able to recognize the letters and words of a language correctly, they can not even start to read a text and will not be able to comprehend it. For this reason, the flow of the written information is tracked in the literary survey from the moment the eyes get the visual stimuli until comprehension takes place. In this vein, the different models of reading are highlighted, namely the bottom-up, the top-down, and the interactive models. The lower-level and higher-level processes of reading comprehension are stressed as well.

The students who have participated in the current study are first-year LMD students at the University of Constantine, Algeria. Three measures have been administered to analyze the results gained in the pretest and posttest. the calculation of the correlation coefficient

(r) has helped us to discern the nature of the relationship between reading speed and reading comprehension; the comparison of means, and calculation of t-tests have served us to show the difference between the experimental and control groups in terms of improvement.

Analyses of the results obtained from the calculation of the correlation coefficient (r) and the student t-tests have allowed us to provide some conclusive interpretations in relation to the hypothesis and research questions set at the introductory part of the study. The correlation coefficient (r) has proved that reading speed and reading comprehension are positively but moderately correlated; that is to say, a systematic increase in reading speed is not systematically accompanied by an increase in reading comprehension so that it would be more difficult to predict a person's degree of reading comprehension from knowledge of his reading speed. In addition, the relationship between reading speed and reading comprehension has not been affected by the treatment; this is statistically proved by the calculation of the correlation coefficient (r) in the posttest.

Two t-tests have been calculated in the posttest to support and validate the results obtained in comparing the means of reading speed and reading comprehension of the control and experimental groups. A t-test for reading speed to measure the difference between the experimental and control groups in the posttest in terms of improvement. A similar t-test is computed for reading comprehension. The analyses and interpretations of the two t-tests have shown that experimental group participants have witnessed an improvement in terms of reading speed in the posttest without decreasing the level of reading comprehension. The results of the study have been in the direction of our hypothesis. They have denoted the possibility of enhancing students' reading speed without

negatively affecting their reading comprehension which is the aim sought behind carrying out the current study.

Eventually, this study has shed light on reading speed as being a major factor in skilled reading and which has been formerly neglected by both teachers and educators. It is now important to grant it more consideration and attention, for improving reading speed equals doubling students reading volumes and widening their reading horizons.

BIBLIOGRAPHY

- Alderson, Charles J. 2000. *Assessing Reading*. Cambridge: CUP.
- Anderson, Neil J. 1999. "Improving Reading Speed Activities for the Classroom", *English Teaching Forum*. 37/2: 2-5
- Badraoui, Nazli. 1992. "The Reading Dilemma: Meeting Individual Needs". *English Teaching Forum*, 30/3: 16-19.
- Baudoin, Margaret E; Bober, Ellen S.; Clarke, Mark A.; Dobson, Barbara K. and Silberstein, Sandra 1994. *Reader's Choice*. Michigan: University Of Michigan Press.
- Bell, Timothy. 2001. Extensive Reading: Speed and Comprehension. *The Reading Matrix*. 1/1
Available n. Timothy 8 hx.Kunic.edu.kw visited on April 29th, 2006.
- Billows, F.L. 1961. *The Techniques of Language Teaching*. London: Longman Group Limited.
- Brown, James Dean. 1988. *Understanding Research in Second Language Learning*. Cambridge: CUP.
- Browning, Jeremy. 2003. Why Teachers should Use Timed Reading in ESL Classes. The Internet TESL Journal, IX/6: 1-13
- Carrasquillo, Angela and Segan, Philip. 1998. *The Teaching of Reading in Spanish to the Bilingual Student*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Carrell, Patricia L. 1988. Introduction: "Interactive Approaches to Second Language Reading". In P. L. Carrell; J. Devine and D. E. Eskey (eds.), *Interactive Models to Second Language Reading*, (pp. 1-7). Cambridge: CUP.
- Carrell, Patricia L. and Grabe, William. 2002. "Reading". In Norberth Schmitt's (eds.), *An Introduction to Applied Linguistics*, (pp. 233-251). London: Arnold.
- Carver, Ronald P. 2000. *The Causes of High and Low Reading Achievement*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Champeau de Lopez, Cheryl. 1993. "Developing Reading Speed". *English Teaching Forum*. 31/1: 50-51.
- Chard, David J; Simmons, Deborah C. and Kameenui, Edward J.1998. "Word Recognition: Research Bases". In E. J. Kameenui, D.C. Simmons (eds.), *What Reading Research Tells*

Us About Children Diverse Learning Needs. Bases and Basics, (pp. 141-169). Mahwah, NJ: Lawrence Erlbaum Associates.

Comman, Marcia and Heavers, Kathy L. 1998. *How to improve Your Study Skills*. Lincolnwood, Illinois VSA: NTC Publishing Group.

Cornoldi, Cesare; De Beni, Rossane and Pazzaglia, Francesca. 1996. "Profiles of Reading Comprehension Difficulties. An Analysis of Single Cases". In C. Cornoldi and J.Oakhill (eds.), *Reading Comprehension Difficulties: Processes and Intervention*, (pp. 113-137). Mahwah, NJ: Lawrence Erlbaum Associates.

Cramer, Par Ward. 1998. *Speed Reading for Better Grades*. Portland: Weston Walch Publishing.

Crawford Michael. 2005. "Adding Variety to word Recognition Exercises". *English Teaching Forum*, 43/2: 36-41.

Daneman, Meredyth. 1991. "Individual Differences in Reading Skills". In R. Barr; M. L. Kamil; P. B. Mosenthal and P. D. Pearson (eds.), *Handbook of Reading Research*, (Vol. 2, pp.512-538). Mahwah, NJ: Lawrence Erlbaum Associates.

Davies, Florence. 1995. *Introducing Reading*. London: English Penguin.

De Leeuw, Manya and De Leeuw, Eric. 1965. *Read Better Read Faster*. Great Britain: Hazell Watson and Viney Limited.

Dechant, Emerald. 1991. *Understanding and Teaching Reading: An Interactive Model*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Dechant, Emerald and Smith, Henry P. 1961. *Psychology in Teaching Reading*. Englewood cliffs, NJ: Prentice Hall.

Devine, Joanne. 1988. "The Relationship between General Language Competence and Second Language Reading Proficiency: Implications for Teaching". In P.L Carrell; J. Devine and D. E. Eskey (eds.), *Interactive Approaches to Second Language Reading*, (pp. 260-277). Cambridge: CUP.

Dubin, Fraida and Bycina, David. 1991. "Academic Reading and the ESL / EFL Teacher". In M. Celce-Murcia. (ed.), *Teaching English as a Second or Foreign Language*, (pp.195-205). Los Angeles: Heinle and Heinle publishers.

- Eskey, David E. 2005. "Reading in a Second Language". In Eli, Hinkel (Ed.), *Handbook of Research in Second Language Teaching and Learning*, (pp.563-581). Mahwah, NJ: Lawrence Erlbaum Associates.
- Eskey, David E. and Grabe, William. 1988. "Interactive Models for Second Language Reading: Perspectives on Instruction". In P. L. Carrell; Y. Devine and D.E. Eskey (eds.), *Interactive Models to Second Language Reading*, (pp. 223-238). Cambridge: CUP.
- Fraser, Carol A. 2004. "Reading Fluency in a Second Language". *The Canadian Modern Language Review*. 61, 1: 135-160
- Gates, A. I. (1949). "Character and Purposes of the Yearbook". In N Henry (ed.), *The Forty Eighth Yearbook of the National Society for the Study of Education: Part II. Reading in the Elementary School* (pp. 1-9). Chicago: University of Chicago Press.
- Goodman, Kenneth. 1988. "The Reading Process". In P. L. Carrell; J. Devine and D. E. Eskey (eds.), *Interactive Approaches to Second Language Reading*, (pp.11-22). Cambridge: CUP.
- Gough, Philip B. and Hoover, Wesley A. 1996. "Some Observations on a Simple View of Reading". In C. Cornoldi and J. Oakhill (eds.), *Reading Comprehension Difficulties: Processes and Intervention*, (pp. 1-15). Mahwah, NJ: Lawrence Erlbaum Associates.
- Grellet, Françoise. 1981. *Developing Reading Skills*. Cambridge: CUP.
- Harmer, Jeremy. 2001. *The Practice of English Language Teaching*. Essex: Pearson Education Limited.
- Hayland, Ken. 1990. "Purpose and Strategy: Teaching Extensive Reading Skill's. *English Teaching Forum*, 28/2: (14-17).
- Huey, E. B. (1968). *The Psychology and Pedagogy of Reading*. Cambridge, MA: MIT Press
- Itzkoff, Seymour W. 1996. *Children Learning to Read: a Guide for Parents and Teachers*. Westport, CT: Praeger Publishers.
- Kamhi, Alan G. 2005. "Finding Beauty in the Ugly Facts about Reading Comprehension". In H. W. Catts and A. G. Kamhi (eds.), *The Connections between Language and Reading Disabilities*, (pp. 201-213). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kamhi, Alan G. and Catts, Hugh W. 2002. "The Language Basis of Reading: Implications for Classification and Treatment of Children with Reading Disabilities". In K. G. Bulter, E.R. Silliman (eds.), *Speaking, Reading and Writing in Children with Language Learning*

- Disabilities. New paradigms in Research and Practice*, (pp. 45-73). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kirk, R. E. (1982). *Experimental Design: Procedures for the Behavioural Sciences*. Inc – Belmont, California: Brooks/ Cole Publishing Company
- Kruidenier, John. 2002. *Research-Based Principles for Adult Basic Education: Reading Instruction*. Portsmouth, New Hampshire: RMC Research Corporation.
- Kucer, Stephen B. 2005. *Dimensions of Literacy: A Conceptual Base for Teaching Reading and Writing in School Setting*. Mahwah, NJ: Lawrence Erlbaum Associates.
- LaBerge, D and Samuels, S. J. 1974. "Toward a Theory of Automatic Information Processing in Reading". *Cognitive Psychology*, 6: 293-323.
- Longman Dictionary of American English 2004. Longman.
- MA, Fran Lehr and Med, Jean Osborn. 2005. *Research-Based Practices in Early Reading Serie: A Focus on Comprehension*. US: Pacific Resources for Education and Learning (PREL).
- McGuiness, Diane. 2005. *Language Development and Learning to Read*. Cambridge: MIT Press.
- McNamara, Timothy P. Miller, Diana L. and Bransford, John D. 1991. "Mental Models and Reading Comprehension". In R. Barr; M. L. Kamil; P. B. Mosenthal and P. D. Pearson (eds.), *Handbook of Reading Research*, (Vol. 2, pp. 490-512). Mahwah, NJ: Lawrence Erlbaum Associates.
- McShane, Susan. 2005. *Applying Research in Reading Instruction for Adults: First steps for Teachers*. New Hampshire: Portsmouth.
- Meribethe, Richards. 2000. "Be a Good Detective: Solve the Case of Oral Reading Fluency. How can Teachers Help Students to Become Fluent (Oral Readers)? Here are clues". *The Reading Teacher*. 53/7: 534-539.
- Miller, Steve. 1975. *Experimental Design and Statistics*. Methuen.
- Mosback, Gerald and Mosback ,Vivienne. 1976. *Practical Faster Reading*. Cambridge: CUP.
- Nation, Kate. 2005. "Connections between Language and Reading in Children with Poor Reading Comprehension". In H. W. Catts and A. G. Kamhi (eds.), *The Connections*

between Language and Reading Disabilities, (pp. 41-55). Mahwah, NJ: Lawrence Erlbaum Associates.

National Reading Panel. (2000). *Teaching Children to read: An Evidence Based Assessment of the Scientific Research Literature on Reading and its Implications for Reading Instruction*. Washington D. C. National Institute of Child Health and Human Development.

Nelson B, Henry. 1948. *Reading in the High School and College*. Chicago; The University of Chicago Press.

Nobuko, Chikamatsu 2006. "Developmental word Recognition: A Study of L1 English Readers of Japanese". *The Modern Language Journal*, 90/1: 68-81.

Nuttall, Christine 1982. *Teaching Reading Skills in a Foreign Language*. Oxford: Heinemann International.

Orasanu, Judith. 1986. *Reading Comprehension: From Research to Practice*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Pollatsek, Alexander and Rayner, Keith. 1989. *The Psychology of Reading*. Hillsdale, NJ: Lawrence Erlbaum.

Pressley, Michael. 2000. "What Should Comprehension Instruction Be the Instruction of?" In R. Barr; M. L. Kamil; P. B. Mosenthal and D. Pearson (eds.), *Handbook of Reading Research*, (Vol. 3, pp. 525-545). Mahwah, N J: Lawrence Erlbaum Associates.

Rasinski, Timothy V. 2000. Speed Does Matter in Reading. *The Reading Teacher*, 54/2: 146.

Samuels, S. Jay and Kamil, Michael L. 2002. "Models of the Reading Process". 2002. In D. P. Pearson, (ed), *Handbook of Reading Research*, (Vol. 1, pp. 185-225). Mahwah, NJ: Lawrence Erlbaum associates.

Samuels, S. Jay. 1999. "Developing Reading Fluency in Learning Disabled Student". In L. S. Swerling and R. J. Sternberg (eds.), *Perspectives on Learning Disabilities: Biological, Cognitive, Contextual*, (pp. 176-189). Boulder, Co: Westview Press.

Schank, Roger C. 1982. *Reading and Understanding: Teaching from the Perspective of Artificial Intelligence*. Hillsdale, N.J: Lawrence Erlbaum Associates.

Smith, Frank. 1985. *Reading*. Cambridge: CUP.

Smith, Frank. 2004. *Understanding Reading*. New Jersey: Lawrence Erlbaum Associates.

- Snow, Catherine. 2002. *Reading for Understanding: Toward an RED Program in Reading Comprehension*. Santa Monica: RAND.
- Spear-Swerling, Louise and Sternberg, Robert J. 1996. *When Poor Readers Become "Learning Disabled"*. Boulder, CO: Westview Press.
- Sternberg, Robert J and Spear-Swerling. 1999. *Perspectives on Learning Disabilities: Biological, Cognitive, Contextual*. Boulder, CO: Westview Press.
- Stanovich, Keith E. 1991. "Word Recognition: Changing perspectives". In R. Barr, M.L. Kamil, P.B. Mosenthal and P.D. Pearson (eds.), *Handbook of Reading Research*, (Vol 2, pp. 418-453). Mahwah, NJ: Lawrence Erlbaum Associates.
- Stanovich, Keith E.; West, Richard F.; Cunningham, Anne E.; Cipelewski, Jim and Siddiqui, Shahid. 1996. "The Role of inadequate Print Exposure as a Determinant of Reading Comprehension Problems". In C. Cornoldi, J. Oakhill (eds.), *Reading Comprehension Difficulties: Processes and Intervention*, (pp. 15-33). Mahwah, NJ: Lawrence Erlbaum Associates.
- Stothard, Susan E. and Hulme, Charles. 1996. "A Comparison of Reading Comprehension and Decoding Difficulties in Children". In C. Cornoldi and J.Oakhill (eds.), *Reading Comprehension Difficulties: Processes and Intervention*, (pp. 93-113). Mahwah, NJ: Lawrence Erlbaum Associates.
- Tenkersley, Karen. 2005. *Literacy Strategies for Grades 4-12. Reinforcing the Threads of Reading*. Virginia: Association For Supervision and Curriculum Development (ASCD).
- Tierney, Robert J. and Cunningham, James W. 2002. "Research on Teaching Reading Comprehension". In P. D. Pearson (ed.), *Handbook of Reading Research* (Vol. 1, pp. 609-656). Mahwah, NJ: Lawrence Erlbaum Associates.
- Wallace, Michael J. 1980. *Study Skills in English*. Cambridge. CUP.
- Wine, R. Lowell. 1976. *Beginning Statistics*. Cambridge: Winthrop Publishers, Inc.

APPENDICES

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Appendix A

PRETEST

To be or not to be Vegetarian

A strict vegetarian is a person who never in his life eats anything derived from animals. The main objection to vegetarianism on a long-term basis is the difficulty of getting enough protein – the body-building element in food. If you have ever been without meat or other animal foods for some days or weeks (say, for religious reasons) you will have noticed that you tend to get physically rather weak. You are glad when the fast is over and you get your reward of a succulent (tasty) meat meal.

Proteins are built up from approximately twenty food elements called 'amino-acids', which are found more abundantly in animal protein than in vegetable protein. This means you have to eat a great deal more vegetable than animal food in order to get enough of these amino-acids. A great deal of the vegetable food goes to waste in this process and from the physiological point of view there is not much to be said in favour of life-long vegetarianism.

The economic side of the question, though, must be considered. Vegetable food is much cheaper than animal food. However, since only a small proportion of the vegetable protein is useful for body-building purposes, a consistent vegetarian, if he is to gain the necessary 70 grams of protein a day, has to consume a greater bulk of food than his digestive organs can comfortably deal with. In fairness, though, it must be pointed out that vegetarians claim they need far less than 70 grams of protein a day.

Whether or not vegetarianism should be advocated for adults, it is definitely unsatisfactory for growing children, who need more protein than they can get from vegetable sources. A lacto-vegetarian diet, which includes milk and milk products such as cheese, can, however, be satisfactory as long as enough milk and milk products are consumed.

Meat and cheese are the best sources of usable animal protein and next come milk, fish and eggs.

Slow and careful cooking of meat makes it more digestible and assists in the breaking down of the protein content by the body. When cooking vegetables, however, the vitamins, and in particular the water-soluble vitamin C, should not be lost through over-cooking.

With fruit, vitamin loss is negligible, because the cooking water is normally eaten along with the fruit, and acids in the fruit help to hold in the vitamin C.

Most nutrition experts today would recommend a balanced diet containing elements of all foods, largely because of our need for sufficient vitamins. Vitamins were first called 'accessory food factors' since it was discovered, in 1906, that most foods contain, besides carbohydrates, fats, minerals and water, these other substances necessary for health. The most common deficiencies in Western diets today are those of vitamins.

The answer is variety in food. A well-balanced diet having sufficient amounts of milk, fruit, vegetables, eggs, and meat, fish or fowl (i.e any good protein source) usually provides adequate minimum daily requirements of all the vitamins.

Adapted from Mosback, 1976: 4

NOM & PRENOM :

Select the answer which is most accurate according to the information given in the passage.

1 A strict vegetarian

- a) rarely eats animal products.
- b) sometimes eats eggs.
- c) never eats any animal products.
- d) never eats protein.

2 We feel weak when we go without meat and other animal products

- a) because we are reducing our food intake.
- b) because we do not get enough protein.
- c) because vegetables do not contain protein.
- d) unless we take plenty of exercise.

3 Proteins are built up from

- a) approximately twenty different foods.
- b) about twenty different vegetables.
- c) various fats and sugars.
- d) about twenty different amino-acids.

4 Physiologically, life-long vegetarianism may not be good because

- a) it makes people very thin.
- b) the body must process too much waste.
- c) the farmers lose money.
- d) vitamin-deficiency diseases may result.

5 One thing in favour of vegetarianism is that

- a) vegetable food is easier to digest.
- b) animal food is less expensive.
- c) vegetable food is cheaper.
- d) it is good for the digestion.

6 The body's daily need for protein is

- a) 90 grams.
- b) 50 grams.
- c) 70 grams.
- d) at least 100 grams.

7 The digestive organs can comfortably deal with

- a) any quantity of food per day.
- b) less than 70 grams of food per day.
- c) A limited quantity of food per day.
- d) any amount of vegetable foods.

8 Vegetarianism is not suitable for growing children because they

- a) need more protein than vegetables can supply.
- b) cannot digest vegetables.
- c) use more energy than adults.
- d) cannot easily digest milk and milk products.

9 Slow and careful cooking of meat

- a) preserves the vitamins.
- b) breaks down the vitamins.
- c) makes it easier to digest.
- d) reduces the protein content.

10 Most nutrition experts today believe the food we eat should contain

- a) more meat than vegetables.
- b) more vegetables than meat.
- c) fruit, cereals and fish as well as meat and vegetables.
- d) as many different kinds of vegetables as possible.

Appendix B

Skimming Activities Used in the Preparation Phase

Activity one:

ADDAMS, JANE (1860-1935), American social worker who founded the Chicago social welfare center known as Hull House. She was born in Cedarville, Ill., on Sept. 6, 1860, the daughter of a prosperous merchant. She graduated from Rockford College (then Rockford seminary) in 1881. Traveling in Europe, she was stirred by the social reform movement in England and especially by a visit to Toynbee Hall, the university settlement. In the 1889, with her college classmate Ellen Gates Starr, she founded Hull House in the slums of Chicago.

Hull House grew rapidly and soon became the most famous settlement house in America. Many reformers came there, not so much to serve as to learn. Jane Addams was the leader and dominant personality. Hull House pioneered in child labor reform and in the fight for better housing, parks, and playgrounds. It initiated steps toward progressive education and attempts to acclimatize immigrants to America.

Jane Addams was a practical idealist and activist. She favored prohibition and woman suffrage, and she campaigned for the Progressive party in 1912. She went beyond politics, however, the politics to her was part of a larger movement to humanize the industrial city.

She had always been a pacifist, and when World War I broke out in 1914, she became chairman of the Woman's Peace party and president of the International Congress of Women. In 1915 she visited many countries in Europe, urging the end of the war through mediation. She remained a pacifist when the United States entered the war in 1917, and as a result she was denounced by many Americans. In 1931 she was awarded the Nobel Peace Prize (sharing the award with Nicholas Murray Butler).

Jane Addams continued to be in the vanguard of social reform movements until her death in Chicago on May 21, 1935. She wrote ten books (*including her famous Twenty Years at Hull House*) and more than 400 articles. The influence that had begun at Hull House continued to spread around the world.

In one minute, skim this passage and indicate if the selection should be read carefully.

Would you do more research on Jane Adams if you were interested in women's contribution to modern elementary education?

.....Yes

.....No

Extracted from Baudoin et al, 1994: 70

Activity two:

AUSTEN, JANE (1775-1817), English novelist, whose narrative world – "the little bit (two Inches wide) of Ivory on which I work with so fine a Brush – has gained in literary reputation with the passage of the years.

Life. Jane Austen was born in Steventon, near Basingstoke, on Dec. 16, 1775. She was one of many children of a clergyman whose income was sufficient to support his family's gentility and whose literate tastes created an urbane atmosphere in the Austen home. She enjoyed an affectionate intimacy with her brothers and her sister, Cassandra. Jane never married but resided and worked in her family's home. The Austens lived largely in the English countryside, and Jane, came to know all of county society, from the village apothecary to the landed aristocracy. She died in Winchester on July 18, 1817, and was buried in the cathedral.

Writings. The principles of English neoclassicism as expressed in the critical essays of Joseph Addison, the ethics of Samuel Johnson, and the fiction of Henry Fielding provided Jane Austen with a literacy heritage.

In *Sense and Sensibility* (1811) sentimentality is seriously attacked as a source of emotional insufficiency; here the values are more complex – reason and imagination are no longer set in opposition but are ironically interrelated. *Pride and Prejudice* (1813), the most popular and wittiest of her novels, resembles the 18th-century comedy of manners with which her work has been too generally associated, and she herself was later dissatisfied with the sustained "playfulness and epigrammatism of the general style". *Mansfield Park* (1814), though it includes sequences of brilliant comedy and bitter verisimilitude, has seemed too serious for some generations of readers; but a growing awareness of the figurative and ironic elements in her novels may alter this response. It is clear that irony is a pervasive and significant element in her fiction, and in *Emma* (1816), perhaps the most perfectly patterned of her narratives, she employs her ironic vision to explore the heroine's delusion. By contrast, *Persuasion* (published posthumously in 1818) reveals a delicately lyric insight characterized by an especially poetic use of natural imagery. *Persuasion* was her last completed novel; during the final months of her life she began to write *Sanditon*. a fragment reverting partly to the manner of her earlier parody.

Would you want to read more about Jane Austen if you were interested in British authors active in politics?

.....Yes

.....No

Extracted from Baudoin et al, 1994: 71

Activity three:

DIONNE QUINTUPLETS, the five daughters born in Callander, Ontario, on May 28, 1934, to Oliva and Elzire Dionne, who already had six children. The quintuplets, Annette, Emilie, Yvonne, Marie, and Cécile, were delivered at the Dionne farmhouse (now preserved and restored). They were cared for by Dr. Allan Roy Dafoe, a local general medical practitioner. The Canadian Red Cross provided them with incubators and nursing care, and the Dafoe Memorial Hospital was built nearby by public subscription as a nursery. In 1935 the Ontario legislature made managers and show producers; their father regained custody in 1941.

In 1943 a new family home was built, and the quintuplets were educated there until they entered Nicolet College in 1952. Marie (Mrs. Florian Houle) died in Montreal on Feb. 27, 1970. Emilie died go an epileptic seizure on Aug. 6, 1954, in Ste, - Agathe-des-Monts, Quebec. Yvonne trained as a nurse and spent several years in convents. Annette married Germain Allard of Montreal, and Cécile married Philippe Langlois of Quebec.

Would you want more information about Dionne Quintuplets if you were interested in social and governmental reaction to multiple births?

.....Yes

.....No

Extracted from Baudoin et al, 1994: 71

Activity four:

CURIE, PIERRE (1859-1908), and **MARIE** (1867-1934), French scientists, whose isolation of polonium and radium marked the beginning of a new era in the study of atomic structure.

Pierre Curie was born in Paris on May 15, 1859, the son of a physician. Until the age of 14 he was trained in science by his father, receiving only a minimum of the classical education that was standard in his time. He went to the Sorbonne at 16 and majored in physics. When he was only 19, he was appointed a teaching assistant and director of laboratory instruction at the Paris Faculty of Sciences.

Early Careers. In 1880, Pierre Curie and his brother Jacques discovered piezoelectricity, the appearance of electrical charges on the surface of certain insulating crystals when subjected to mechanical stresses. About 1891, Pierre began an intense investigation of magnetism at elevated temperatures. This led to the discovery of the *Curie point* – the temperature at which ferromagnetic substances lose their magnetism. Further research led to the formulation of *Curie's law*, which states that the magnetic susceptibility of ferromagnetic substances above the Curie point is inversely proportional to the absolute temperature. This law is not strictly true and was modified by Pierre Weiss in 1907.

In 1895, Pierre married Marie Sklowdoska, a young student from Poland, who had begun her scientific career with an investigation of the magnetic properties of different kinds of steel. In fact, it was their mutual interest in magnetism that drew them together. Marie Sklowdoska was born in Warsaw on Nov. 7, 1867. She made a brilliant record as a student but found no outlet for her talents in her native country. She became a private tutor and might have remained in that position had it not been for her sister Bronislawa, who lived in Paris. Marie joined her sister in 1891 and studied mathematics, physics, and chemistry at the Sorbonne. Her marriage to Pierre Curie thrust her into the mainstream of French science. Their scientific careers were to remain intertwined until Pierre's tragic death.

Would you want to read more about the Curies if you were interested in scientific contribution to modern transportation?

.....Yes

..... No

Extracted from Baudoin et al, 1994: 72

Activity five:

EDDY, MARY BAKER (1821-1910). The subject of sharp controversy in her own day, she is now recognized as a pioneer of modern spiritual healing, but her position as a Christian thinker is still variously estimated. Mrs. Eddy herself urged that her life and her works be submitted to the New Testament test "By their fruits ye shall know them" (Matthew 7: 20), and any responsible estimate of her must be determined by one's understanding of Christian Science.

Life. Mary Morse Baker, the daughter of a farmer, was born at Bow, near Concord, N.H. on July 16, 1821. Because of her poor health her education was sporadic, but she received valuable mental stimulus and guidance from her elder brother Albert, a brilliant student at Dartmouth. Although deeply religious, she was also independent and early took issue with her father's strict Calvinism. Largely because of the sense of New Testament Christianity she imbibed from her mother, she found it impossible to accept the doctrine that most of the human race had been born to inevitable damnation. A sharp confrontation on this issue with the minister of the Congregational Church at Sanbornton Bridge (now Tilton), N.H, when she was 17, resulted surprisingly in her being accepted into membership despite her doctrinal protest.

In 1866 her years of illness came to an abrupt climax when she was critically injured by a fall and restored suddenly to health while reading in the Bible of one of Jesus' healings (Matthew 9 : 1-8). This was the genesis of Christian Science. The remainder of her long life was given to study, writing, healing, teaching, and finally to organizing and guiding the Church of Christ Scientist. In 1877 she married Asa Gilbert Eddy, a practitioner of Christian Science healing. One of her last acts, when she was 87, was the founding of the international daily newspaper the *Christian Science Monitor* in 1908. She died in Chestnut Hill, Mass, on Dec. 3, 1910, leaving behind her a church with nearly 100,000 members.

Thought. During her years of invalidism Mrs. Eddy's faith in orthodox medicine had waned and she had sought relief through homeopathy, hydropathy, and other systems then popular. Gradually she came to the conclusion that all disease was mental rather than physical. This was confirmed by her experience in the early 1860's with a healer named Phineas P. Quimby, in Portland, Me.

Would you want to read more about Mary Baker Eddy if you were interested in religious leaders and writers? Yes

.....No

Extracted from Baudoin et al, 1994: 72

Activity six:

JENNER, EDWARD. Jenner was born May 17, 1749, in Berkeley, Gloucestershire, at a time when the patterns of British medical practice and education were undergoing gradual change. Slowly the division between the Oxford or Cambridge-trained physicians and the apothecaries or surgeons who were much less educated and who acquitted their medical knowledge through apprenticeship rather than through academic work – was becoming less sharp and hospital work was becoming much more important.

Jenner was a country youth, the son of a clergyman who died when the boy was only five. Brought up largely by an older brother who was also a clergyman, Edward acquired a love of nature that remained with him all his life. He attended grammar school and at the age of 13 was apprenticed to a nearby surgeon. In the following eight years Jenner acquired a sound knowledge of medical and surgical practice. On completing his apprenticeship at the age of 21, he went to London and became the house pupil of John Hunter, who was on the staff of St. George's Hospital and was soon to become one of the most prominent surgeons in London. Even more important, however, he was an anatomist, biologist, and experimentalist of the first rank; not only did he collect biological specimens but he also concerned himself with problems of physiology and function.

The firm friendship that grew between the two men lasted until the death of Hunter in 1793. From no one else could Jenner have received the stimuli that so confirmed his natural bent – a catholic interest in biological phenomena, disciplined powers of observation, sharpening of critical faculties, and a reliance on experimental investigation. From, Hunter, Jenner received the characteristic advice: "Why think { i.e. speculate } – why not try the experiment ?"

In addition to his training and experience in biology, Jenner made progress in clinical surgery. At the end of two years in London, he returned, in 1773, to country practice in Berkeley and enjoyed substantial success. He was capable, skillful, and popular. In addition to practicing medicine, he joined two medical groups for the promotion of medical knowledge and wrote occasional medical papers. He played the violin in a musical club, wrote light verse, and, as a naturalist, made many observations, particularly on the nesting habits of the cuckoo and on bird migration. He also

Would you want to read more about Edward Jenner if you were interested in the lives of physicians who made important medical discoveries?

.....Yes

.....No

Extracted from Baudoin et al, 1994: 73

Appendix C

Scanning Exercises

Extracted from Baudoin et al, 1994: 23, 25, 27

Exercise 1

The chart on page 155 was also taken from the World Almanac.

Scan to find the answers to the following questions.

1. What is the name of the highest waterfall listed here?
2. What is the name of the highest single-leap waterfall listed here?
3. What is the height of the shortest waterfall listed here?
4. What is the height of Catarata de Candelas in Columbia? What is the name of the river that feeds it?
5. How many waterfalls are listed for Japan?
6. How many of California's a waterfall run full force throughout the year?

Exercise 2

The calendar on page 156 is typical of the list of social events provided by many newspapers in the United States and Canada.

Scan to find the answers to the following questions.

1. Under which section (s) would you look if you wanted to go a play?
2. Under which section (s) would you look if you wanted to spend an evening eating, drinking, and dancing?
3. When do the Detroit Pistons play basketball this week?
4. Is Lou Rawls singing at a Detroit area night club this week?
5. Is there a pop concert Thursday night?
6. Could you attend a classical music concert Saturday night?
7. What is the topic of Seymour Hersh's lecture Wednesday morning?

Exercise 3

A variety of publications provide information for considering attending colleges and universities. The guide on page 157 contains information for international students.

You are interested in attending a school in Oregon, and a friend has sent you a photocopy of Admission Requirements for International Students so that you can learn something about colleges and universities in that state. Scan to answers to the following questions. Your teacher may want you to write out the answers in the space provided or merely underline the appropriate portions of text.

1. What level of English proficiency is required at most of the schools?
2. Which school has the largest number of international student? Which school has the largest percentage of international students?
3. What schools have intensive English programs?
4. What is the cost of attending school at Concordia? Who would you call to get more information?
5. Which school(s) offer graduate work?
6. If you do not want to take the TOEFL. Which schools might you apply to?
7. Which school(s) do you think you might apply to? Why?

Appendix D

Prediction From the Title

Passage extracted from Wallace, 1980: 12-13

The passage that follows is entitled 'Aspects of the reading process and reading efficiency'.

Can you suggest two questions which you might reasonably expect the text to cover?

Read the passage and see if your questions are answered.

Aspects of the reading process and reading efficiency

What actually happens when read? Some people think that we read one word at a time, understand it and then go on to next. Other people think that our eyes smoothly glide over each line from left to right, then back to the beginning of the next line, and so on. In fact, the physical process of reading usually doesn't work in either of those ways.

Suppose you do this experiment with a friend. Get hold of a book with a large page size and lines that go right across the page. Get your friend to hold the book up and to read it with the top of the book just below his eye level. This means that you can watch the movement of his eyes as he reads the page. If you do this, you will see that your friend's eyes do not make a continuous forward sweep. Instead they progress by little 'jumps', moving, then stopping, as they progress along the line. This kind of jumping movement is called a *saccadic* movement.

There has to be this starting and stopping movement because the eye can see only when it is *still*, i.e. motionless. Every time the eyes pause it sees a phrase or even a sentence, then jumps to the next part of the line, and so on.

So you may have read the sentence like this:

Every time/the eye pauses/
it sees a phrase/ or even a sentence,/ then jumps/ to the next part/ of the line,/ and so on./

There is another interesting fact about eye movement. If you record the eye movements of someone who is reading, you will notice that, from time to time, the reader goes back and looks again at something he has read before; in other words, he *regresses* to an earlier part of the text, probably because he realises he is not understanding the passage properly. Then he comes back to where he left off and continues reading. At one time, it was thought that regression was a fault, but it is in fact a very necessary activity in efficient reading.

There are several different kinds of faults in reading, which are usually more exaggerated with foreign learners. The most common one is that most people read more slowly than should. There is no rate at which people ought to read, of course; it depends on your purpose in reading, how difficult the language is, how unfamiliar the material and so on. But most people read everything at the same slow speed, and do not seem to realise that they can read faster or slower as required. Other people say the words to themselves, or move their lips-these habits slow the reader down to something near speaking speed, which is, of course, much slower than reading speed. Another habit which can slow you down is following the line with your finger, or with a pen.

If you want to be able to read faster, the secret is simply to practice under timed conditions. This means that you should give yourself a certain amount of time to read with understanding, then check your time when you have finished. Students who have practiced fast reading even for only an hour a week, have shown average improvements of over 50% over a term of ten weeks' duration. Reading fast does not necessarily mean reading with less comprehension – in fact, usually students show a small increase in comprehension as well as a dramatic increase in speed.

Appendix E

Finding the Idea of the Paragraph as Quickly as Possible

Paragraphs extracted from Baudoin et al, 1994: 13-19

Paragraph one:

By the time the first European travelers on the American continent began to record some of their observations about Indians, the Cherokee people had developed an advanced culture that probably was exceeded only by the civilized tribes of the Southwest: Mayan and Aztec groups. The social structures of the Cherokee people consisted of a form of clan kinship in which there were seven recognized clans.

All members of a clan were considered blood brothers and sisters and were bound by honor to defend any member of that clan from wrong.

Each clan, the Bird, Paint, Deer, Wolf, Long Hair, and Wild Potato, was represented in the civil council by a councilor or councilors. The chief of the tribe was selected from one of these clans and did not inherit his office from his kinsmen. Actually, there were two chiefs, a Peace chief and War chief. The Peace chief served when the tribe was at peace, but the minute war was declared, the War chief was in command.

Select the statement that best expresses the main idea of the paragraph.

- a. The Cherokee chief was different in war time than in peace time.
- b. Before the arrival of the Europeans the Cherokees had developed a well-organized society.
- c. The Mayans and the Aztecs were part of the Cherokee tribe.
- d. Several Indian cultures had developed advanced civilizations before Europeans arrived.

Paragraph two:

The first invention of human beings was the wheel. Although no wheel forms are found in nature, undoubtedly the earliest "wheels" were smooth logs which were used for moving weights over the earth's surface. No one recorded who he or she was or when it happened, but when the "first inventor" placed a wheel on an axle, people began to roll from one place to another. Records of this type of wheel have been found among Egyptian relics dating back to 2,000 B.C. and earlier Chinese civilizations are credited with independent invention of the same mechanism. The wheel so fascinated the human mind that people have spent centuries building machines around it: yet in over 4,000 years its basic design has remained unchanged. All about us we see the spinning shafts, gears, flywheels, pulleys, and rotors which are the descendants of the first wheel. The roaring propeller of an aircraft engine, the whirling wheel of a giant steam turbine, and the hairspring of a tiny watch are examples of the rotary motion which characterizes our mechanical world. It is hard to conceive of continuous motion without the wheel.

Select the statement that best expresses the main idea of the paragraph.

- a. The wheel is used today in industry and transportation.
- b. One of human beings' first inventions, the wheel, has remained important for 4,000 years.
- c. The basic design of the wheel has been changed to meet the needs of industrial society.
- d. Although we don't know exactly who invented the wheel, it is evident that the Egyptians and Chinese used it about 4,000 years ago.

Paragraph three:

At the University of Kansas art museum, investigators tested the effects of different colored walls on two groups of visitors to an exhibit of paintings. For the first group the room was painted white; for the second, dark brown. Movement of each group was followed by an electrical system under the carpet. The experiment revealed that those who entered the dark brown room walked more quickly, covered more area, and spent less time in the room than the people in the white environment. Dark brown stimulated more activity, but the activity ended sooner. Not only the choice of colors but also the general appearance of a room communicate and influence those inside.

Another experiment presented subjects with photographs of faces that were to be rated in terms of energy and well-being. Three groups of subjects were used: each was shown the same photos, but each group was in a different kind of room. One group was in an "ugly" room that resembled a messy storeroom. Another group was in an average room—a nice office. The third group was in a tastefully designed living room with carpeting and drapes. Results showed that the subjects in the beautiful room tended to give higher ratings to the faces than did those in the ugly room. Other studies suggest that students do better on tests taken in comfortable, attractive rooms than in ordinary-looking or ugly rooms.

Select the statement that best expresses the main idea of the paragraph.

- a) People in beautiful rooms tend to give higher ratings to photographs of faces than people in ugly rooms.
- b) The color and general appearance of a room influence the behavior and attitudes of the people in it.
- c) The University of Kansas has studied the effects of the color of a room on people's behavior.
- d) Beautifully decorated, light-colored rooms make people more comfortable than ugly, dark rooms.

Paragraph four:

Perhaps the most startling theory to come out of kinesics, the study of body movement, was suggested by Professor Ray Birdwhistell. He believes that physical appearance is often culturally programmed. In other words, we learn our looks—we are not born with them. A baby has generally unformed facial features. A baby, according to Birdwhistell, learns where to set the eyebrows by looking at those around—family and friends. This helps explain why the people of some regions of the United States look so much alike. New Englanders or Southerners have certain common facial characteristics that cannot be explained by genetics. The exact shape of the mouth is not set at birth, it is learned after. In fact, the final mouth shape is not formed until well after permanent teeth are set. For many, this can be well into adolescence. A husband and wife together for a long time often come to look somewhat alike. We learn our looks from those around us. This is perhaps why in a single country there are areas where people smile more than those in other areas. In the United States, for example, the South is the part of the country where the people smile most frequently. In New England they smile less, and in the western part of New York state still less. Many Southerners find cities such as New York cold and unfriendly, partly because people on Madison Avenue smile less than people on Peachtree Street in Atlanta, Georgia. People in densely populated urban areas also tend to smile and greet each other in public less than do people in rural areas and smile and greet each other in public less than do people in rural areas and small towns.

Select the statement that best expresses the main idea of the paragraph.

- a) Ray Birdwhistell can tell what region of the United States a person is from by how much he or she smiles.
- b) Ray Birdwhistell is a leader in the field of kinesics.
- c) Ray Birdwhistell says that our physical appearance is influenced by the appearance of people around us.
- d) People who live in the country are more friendly than people who live in densely.

Paragraph five:

Teaching is supposed to be a professional activity requiring long and complicated training as well as official certification. The act of teaching is looked upon as a flow of knowledge from a higher source to an empty container. The student's role is one of receiving information; the teacher's role is one of sending it. There is a clear distinction assumed between one who supposed to know (and therefore not capable of being wrong) and another, usually younger person who is supposed not to know. However, teaching need not be the province of a special group of people nor need it be looked upon as a technical skill. Teaching can be more like guiding and assisting than forcing information into a supposedly empty head. If you have a certain skill you should be able to share it with someone. You do not have to get certified to convey what you know to someone else or to help them in their attempt to teach themselves. All of us, from the very youngest children to the oldest members of our cultures should come to realize our own potential as teachers. We can share what we know, however little it might be, with someone who has need of that knowledge or skill.

Select the statement that best expresses the main idea of the paragraph.

- a) The author believes that it is not difficult to be a good teacher.
- b) The author believes that every person has the potential to be a teacher.
- c) The author believes that teaching is a professional activity requiring special training.
- d) The author believes that teaching is the flow of knowledge from a higher source to an empty container.

Paragraph six:

Albert Einstein once attributed the creativity of a famous scientist to the fact that he "never went to school, and therefore preserved the rare gift of thinking freely." There is undoubtedly truth in Einstein's observation; many artists and geniuses seem to view their schooling as a disadvantage. But such a truth is not a criticism of schools. It is the function of schools to civilize, not to train explorers. The explorer is always a lonely individual whether his or her pioneering be in art, music, science, or technology. The creative explorer of unmapped lands shares with the genius what William James described as the "faculty of perceiving in an unhabitual way." Insofar as schools teach perceptual patterns they tend to destroy creativity and genius. But if schools could somehow exist solely to cultivate genius, then society would break down. For the social order demands unity and widespread agreement, both traits that are destructive to creativity. There will always be conflict between the demands of society and the impulses of creativity and genius.

Select the statement that best expresses the main idea of the paragraph

- a. Albert Einstein and other geniuses and artists have said that schools limit creativity and genius.
- b. Schools should be designed to encourage creativity.
- c. Explorers can be compared to geniuses because both groups look at the world differently from the way most people do.
- d. Schools can never satisfy the needs of both geniuses and society as a whole.

Appendix F

Texts Used in the Training Phase (Paced Reading Activities)

Text: 01

What is Your Reading Rate?

If someone asks you "what is your reading rate?" you can be sure that person knows very little about reading. It is incorrect to assume a person has just one reading rate. Although research shows the average high school student reads an average of 250 words per minute, the really good reader knows reading rates need to be flexible.

Some students think that, if they read everything slowly, they will achieve maximum comprehension. However, they are wrong. In fact, sometimes reading so slowly has the opposite effect because it lulls those people into daydreaming. Their
100 brains are not being challenged. Successful readers learn to read quickly when it is warranted and slowly when it is necessary.

So, what determines the correct reading speed? Three factors determine it. The first is the difficulty of the material. If the material you are reading is complex, you must slow your reading speed. If the material is easy and entertaining, you can speed up your reading. The second factor is purpose. Why are you reading the material? If you are reading it to prepare for a quiz the next day, you'd better slow your pace. If you
200 are reading for pleasure, then you can speed up. Finally, the third factor that determines reading speed is familiarity with the subject matter. If the material and the concepts are new to you, then slow down your reading to take them in. If you are already familiar with the concepts in the material, then speed up. Good readers, learn to vary their speed from 150 to 800 words per minute, choosing their appropriate speed after considering
276 all three factors: difficulty, purpose, and familiarity.

Extracted from Coman and Heavers, 1998: 85

NOM & PRENOM :

Number from one to ten on a separate sheet of paper. Beside each number write true if the statement is true and false if the statement is false.

1. Everyone has one personal reading rate.
2. High school students read an average of 250 words per minute.
3. Reading slowly assures a student of maximum comprehension.
4. The difficulty of the material is a consideration when choosing a reading rate.
5. A very difficult selection should be read at 250 words per minute.
6. A light, entertaining selection should be read at 250 words per minute.
7. Almost everyone reads material for a quiz at a slower speed than material for relaxation.
8. An astronomy expert can probably read an article on astronomy at a faster rate than someone who knows nothing about the subject.
9. Before selecting your own reading rate, you should consider the average reading rate of others in your class.
10. One of the major points made in this unit is that reading rates must be constantly changing.

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Vocabulary Affects Speed and Comprehension

The previous text “Reading Habits That Slow you Down” focused on four common reading problems that affect reading speed. A fifth problem is a poor vocabulary. If you stumble over words, or you have to stop and think about them, your reading speed is slowed. Developing a good vocabulary will help you improve both your reading speed and your comprehension.

One way to improve your vocabulary is to read a lot. The more you read, the more words you will encounter, and the more your vocabulary will grow.

100 You can also improve your vocabulary by paying attention to new words. Instead of skipping over it, stop and figure out what a new word means. Use context clues from the sentence, if possible.

If context clues don't help, look up the meaning of the word in your dictionary. Then make a special effort to learn it. Using the new word in your writing or conversations will help you remember it.

Keeping a vocabulary notebook will also help. Although writing down the new words and their meanings takes more time, the benefits to you will make your efforts well worthwhile.

200 If possible, get involved in an organized vocabulary program in class. Use a vocabulary workbook and complete at least one lesson per week. Your vocabulary will grow if you make a genuine effort to learn and use the words in each lesson.

Finally, become aware of root words, prefixes, and suffixes. In *Speed-reading for Better Grades*, Ward Cramer states it is possible to double your vocabulary by learning no more than a couple dozen prefixes.

294 Of course, the key to developing your vocabulary is by being aware of new words, by discovering their meanings, by committing them memory, and by using them in your conversations.

Extracted from Coman and Heavers, 1998: 89

NOM & PRENOM :

Number from one to ten on a separate sheet of paper. Beside each number write true if the statement is true and false if the statement is false.

- a) Developing a good vocabulary will help your reading speed but not your comprehension.
- b) The more you read, the more your vocabulary will grow.
- c) Using clues within a sentence to determine the meaning of a word will help increase your vocabulary.
- d) Context clues are the clues to a word's meaning given by the sentence or paragraph in which the word appears.
- e) The process of looking up a word's definition in the dictionary is sufficient for learning that word.
- f) Using a new word in your conversation with others does not help you learn the word.
- g) Keeping a vocabulary notebook takes too much time, and the results are not worth it.
- h) Completing lessons in a vocabulary workbook results in an increased vocabulary.
- i) Learning a couple dozen prefixes will double your vocabulary.
- j) Learning root words is a waste of time for vocabulary building.

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| Time : | Speed : | Comprehension : |
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How Do You Read?

Most students probably assume that when they read, their eyes follow in a straight motion across the lines of print, like this:



Eyes follow the print in a straight line.

That is not so. You need only to sit across from someone and carefully observe his or her reading process to discover:

The eyes move in an arc across the lines of print.

Each time the eyes reach the bottom of the arc; they pause, or stop to take in words.

100 These pauses are called fixations. It is only at the fixation point that your eyes see words. When the eye is making the arc, the motion is rapid; in fact, it is so rapid the reader is unaware of it. Only your brain “sees” the rapid blur (unclear image) of the arc. It is fortunate that as you read you do not see the arc-it would cause a terrible headache!

As your eyes go through the motions of reading, they are in the arc 6 percent of the time; 94 percent is spent at the points of fixation.

200 Slow readers move their in the word-by-word arc illustrated above. It is easy to see why slow readers tire easily and become discouraged. Reading is a difficult process for them.

Fast readers, on the other hand, read more fluently.

300 Fast readers take in 2.5 to 3 words per fixation, making the task of reading a much simpler one. The goal of the use of rapid discrimination exercises as beginning drills is to expand the amount of letters, and then words, you can take in per fixation. You begin with as few as four letters per fixation. With practice, you can work up to 2.5 to 3 words per fixation. This skill will help you be a better reader and will save you time, as well.

Extracted from Coman and Heavers, 1998: 86

NOM & PRENOM :

Number from one to ten on a separate sheet of paper. Beside each number write true if the statement is true and false if the statement is false .

1. A fixation is a pause or stop of the eyes to take in words.
2. A reader's eyes do not move in a straight line when reading.
3. Fifty percent of a reader's time is spent in motion between words, and 50 percent is spent fixating.
4. An inefficient or slow reader takes in one word per fixation.
5. An efficient reader takes in four to five words per fixation.
6. The eyes of a slow reader make an arc every 2.5 to 3 words.
7. The eyes of an efficient reader make an arc covering one word at a time.
8. Readers are aware of the blur made when their eyes make the arc motion from one fixation to the next.
9. The blur made by the arc motion causes some people to get frequent headaches when reading.
10. There is no difference between the amount of effort a slow reader puts forth while reading and the amount of effort a fast reader puts forth.

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Reading Habits that Slow You Down

As you work to build your speed in reading, be alert to four common reading habits that may slow you down.

100 The first, vocalizing, is mouthing or saying the words aloud as you read them. It is easy to spot someone who has this problem. And vocalizing is a problem, because the act of mouthing or speaking slows you down; it takes too much time to say the words with your lips. There are several ways to help you stop vocalizing. Try chewing gum or holding a pencil clenched between your teeth as you read. Or, put your hand over your mouth or keep it at your throat to feel for vibrations of vocalizing.

Unfortunately, the second problem reading habit is much harder to detect. It is called subvocalizing, and it is characterized by a reader's forming the words in his or her larynx. In order to avoid pronouncing internally the words you read, practice reading rapidly under timed conditions, or talk about the material to yourself.

200 The third problem reading habit is pointing. When you point with your finger or a pencil or a ruler, you add another mechanical step to the reading process. This can only slow you down. The solution is to make pointing impossible by folding your hands in your lap.

The last problem reading habit is head movement. Following the lines of print with your head does not increase reading speed. Like pointing, it adds another mechanical step to the reading process. To avoid it, hold your chin in your hand, or place your hand against the side of your head.

300 Once you are aware that these reading habits can slow you down, you can begin improving your reading speed on a daily basis. Be aware that an exception to the total elimination of these habits might be when you are reading difficult materials. Vocalization, subvocalization, and following along with a finger may help some people remember complex information.

Extracted from Coman and Heavers, 1998: 87

NOM & PRENOM :

Number from one to ten on a separate sheet of paper. Beside each number write true if the statement is true and false if the statement is false .

1. Vocalizing is mouthing the words when reading.
2. Vocalizing does not slow a reader's speed; it just distracts others.
3. Chewing gum while reading is a cure for vocalizing.
4. Subvocalizing is like vocalizing; the words are said aloud for everyone to hear.
5. Reading rapidly under timed conditions is a cure for subvocalizing.
6. Pointing with your finger helps you keep your place and improves your reading speed.
7. Pointing with a pencil or ruler is preferred to pointing with a finger.
8. Moving your head to follow the lines of print slows your reading speed.
9. A cure for head movement is to hold you hand against the side of your head as you read, so that you can feel any head movement.
10. There are only four reading problems people need to consider.

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Dried Food

Centuries ago, man discovered that removing drops of water from food helps to preserve it, and that the easiest way to do this is to expose the food to sun and wind. In this way the North American Indians produce pemmican (dried meat ground into powder and made into cakes), the Scandinavians make stockfish and the Arabs dried dates and 'apricot leather'.

100 All foods contain water – cabbage and other leaf vegetables contain as much as 93% water, potatoes and other root vegetables 80%, lean meat 75% and fish anything from 80% to 60% depending on how fatty it is. If this water is removed, the activity of the bacteria which cause food to go bad is checked.

200 Fruit is sun-dried in Asia Minor, Greece, Spain and other Mediterranean countries, and also in California, South Africa and Australia. The methods used vary, but in general, the fruit is spread out on trays in drying yards in the hot sun. In order to prevent darkening, pears, peaches and apricots are exposed to the fumes of burning sulphur before drying. Plums, for making prunes, and certain varieties of grapes for making raisins and currants, are dipped in an alkaline solution in order to crack the skins of the fruit slightly and remove their wax coating, so increasing the rate of drying.

Nowadays most foods are dried mechanically. The conventional method of such dehydration is to put food in chambers through which hot air is blown at temperatures of about 110° C at exit. This is the usual method for drying such things as vegetables, minced meat, and fish.

300 Liquids such as milk, coffee, tea, soups and eggs may be dried by pouring them over a heated horizontal steel cylinder or by spraying them into a chamber through which a current of hot air passes. In the first case, the dried material is removed from the roller as a thin film which is then broken up into small, though still relatively coarse flakes (thick pieces). In the second process it falls to the bottom of the chamber as a fine powder. Where recognizable pieces of meat and vegetables are required, as in soup, the ingredients are dried separately and then mixed.

400 Dried foods take up less room and weigh less than the same food packed in cans or frozen, and they do not need to be stored in special conditions. For these reasons they are invaluable to climbers, explorers and soldiers in battle, who have little storage space. They are also popular with housewives because it takes so little time to cook them. Usually it is
444 just a case of replacing the dried-out moisture with boiling water.

Adapted from Mosback, 1976: 62

NOM & PRENOM :

Select the answer which is most accurate according to the information given in the passage.

01/ The open-air method of drying food

- a) is the one most commonly used today.
- b) was invented by the American Indians.
- c) has been known for hundreds of years.
- d) tends to be unhygienic.

02/ The water content

- a) does not vary from food to food.
- b) is greater in green vegetables than in lean meat.
- c) is greater in fish than in vegetables.
- d) has never been accurately calculated

03/ Bacteria which cause food to go bad

- a) cannot live in sunlight.
- b) are killed by drying.
- c) are in no way dependent on the water content.
- d) have their activity greatly reduced by drying.

04/ Fruit is sun dried

- a) always by the same method.
- b) generally on trays.
- c) in every country in the world.
- d) by spreading it out under glass panels.

05/ Sulphur fumes are used before drying some fruits

- a) to dry them more quickly.
- b) to preserve their colour.
- c) to prevent the skin from cracking.
- d) to kill off bacteria.

06/ Nowadays vegetables are most commonly dried

- a) on horizontal cylinders.
- b) in hot-air chambers.
- c) in the sun and wind.
- d) using the open tray method.

07/ Powdered coffee is made

- a) by spraying the liquid over a cylinder.
- b) in one of two different ways.
- c) in the same way as minced meat.
- d) by passing through a machine which crushes it into very small pieces.

08/ If soup requires recognizable pieces of meat, they are

- a) treated separately.
- b) allowed to fall to the bottom of the drying chamber.
- c) mixed in later as a fine powder.
- d) sold separately in sealed plastic bags.

09/ Dried foods

- a) are often packed in cans or frozen.
- b) are used by soldiers and climbers.
- c) need more storage space than soldiers usually have available.
- d) are much cheaper than canned or frozen products.

10/ Housewives like dried foods because they

- a) are quick to prepare.
- b) taste better.
- c) can be preserved by boiling in water.
- d) look fresh and appetizing when cooked.

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| Time : | Speed : | Comprehension : |
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Canning Food

Food which is kept too long goes bad because it is attacked by yeasts, moulds and bacteria. The canning process, however, closes up the product in a container so that no infection can reach it, and then it is sterilized by heat. Heat sterilization destroys all infections present in food inside the can. No chemical preservatives are necessary, and properly canned food does not change for the worse during storage.

100 The principle was discovered in 1809 by a Frenchman called Nicolas Appert. He corked food lightly in wide-necked glass bottles and immersed them in a bath of hot water to drive out the air, then he hammered the covers down to close the jars hermetically. Appert's discovery was rewarded by the French government because better preserved food supplies were needed for Napoleon's troops on distant campaigns.

By 1814 an English manufacturer had replaced Appert's glass jars with metal containers and was supplying tinned vegetable soup and meat to the British navy. The next scientific improvement, in 1860, was the result of Louis Pasteur's work on sterilization through the application of scientifically controlled heat.

200 Today vegetables, fish, fruit, meat and beer are canned in enormous quantities. Within three generations the eating habits of millions have been revolutionized. Foods that were previously seasonal may now be eaten at any time, and strange foods are available far from the countries where they are grown. The profitable crops many farmers now produce often depend on the nearness of a canning factory.

The first stage in the canning process is the preparation of the raw food. Diseased and waste portions are thrown away; meat and fish are cleaned and trimmed; fruit and vegetables washed and graded for size. The jobs are principally done by machine.

300 The next stage, for vegetables only, is blanching. This is immersion in very hot or boiling water for a short time to remove air and soften the vegetable. This makes it easier to pack into cans for sterilization. Some packing machines fill up 400 cans a minute. Fruit, fish and meat are packed uncooked and cold into cans, and then all the air is removed. When the cans are closed, the pressure inside each can is only about half the pressure of the outside air. This is 'vacuum' packing.

400 During the sterilization process which follows, the cans are subjected to steam or boiling water, with the temperature and duration varying according to the type of food. Cans of fruit, for example, take only 5-10 minutes in boiling water, while meat and fish are cooked at higher temperatures for longer periods. After sterilization, the cans are cooled quickly to 32°C. to prevent the contents from becoming too soft.

488 The final stage before sending to the wholesale or retail grocer is labeling, and packing the tins into boxes. Nowadays, however, labeling is often printed on in advance by the can-maker and no paper labels are then required.

Adapted from Mosback, 1976: 25

NOM & PRENOM :

Say whether the following statements are true or false according to the information given in the passage.

1. Chemical preservatives are necessary in canned food.
2. Nicolas Appert, a Frenchman, was not the first man to preserve food in cans.
3. Food has been canned for two centuries now.
4. Napoleon rewarded Louis Pasteur for his work in the preservation of food.
5. Canning factories are often built close to the farms which provide them with food.
6. Much of the preparation of raw food for canning has to be done by hand.
7. Blanching is an essential step in all food canning.
8. Meat is cooked after it is put in the cans.
9. The pressure inside vacuum-packed cans is about twice that of the outside air.
10. The sterilization process does not take more than 5-10 minutes.

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| Time : | Speed : | Comprehension : |
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Making Leather

Hides and skins are the raw material of the leather manufacturer or tanner. When man first used animal skins is not known. Skins, even when preserved by tanning, do not last as long as stone, pottery, metals and bone, and our knowledge about the early use of skins is vague. However, the numerous flint scrapers and bone or ivory sewing needles in our museums show that tens of thousands of years ago, in the early Stone Age, skins were prepared and used long before textiles. Nowadays, hides and skins are essential raw materials and important articles of commerce.

100 Any animal skin can be made into leather, but the skins chiefly used come from cattle, sheep, goats, pigs and horses. To a lesser extent the skins from dogs, deer, reptiles, marine animals, fish and birds are also used. Snakes, lizards, seals, whales, and sharks all contribute to leather manufacture.

'Hide' is the trade word for the skins of the larger animals such as full-grown cattle and horses; and 'skin' for the smaller animals, and immature large animals such as ponies and calves. Some skins are made into leather after the hair or wool has been removed; but the
200 skins of the fur-bearing animals and sometimes of sheep, lambs and ponies are processed, or 'dressed' with the hair or wool still in place.

Most cattle hides come from South America, the U.S.A. and from Australia with smaller quantities from East and West Africa, Central America and the Sudan. Sheepskins come from Australia and New Zealand, and the best goat skins come from India, Pakistan, Ethiopia, Arabia and Nigeria.

300 There is usually a long interval between the flaying, or stripping (removing), of the skin from the animal and putting it into the tannery for processing. If the flayed skins were left wet, they would go bad, just like meat; they must therefore be preserved in some way. The commonest method is salting.

This involves sprinkling the skins with salt on their inner side; or immersing the skins completely in strong salt solution for some hours, after which they are dried and sprinkled with solid salt.

400 Another method of drying is to stretch the skins out on the ground or on frames and to dry them in the sun, or even better in the shade. Beetles and other insects eat skins and must be kept away by the use of some chemical such as D.D.T. The dried skins are called 'crust' leather and are sent in this form to the tanneries for the very complicated process of tanning. After tanning, only the 'corium' or middle layer of the skin is left to provide leather as we know it. It is to the closely knit fibre structure of the corium that leather owes its qualities of flexibility, strength and elasticity, its resistance to rubbing and its unique
493 power of allowing water vapour and air to pass through it while resisting penetration by liquid water itself.

Adapted from Mosback, 1976: 47

NOM & PRENOM :

Select the answer which is most accurate according to the information given in the passage.

01/ Skins do not last as long as pottery

unless they are preserved by tanning.
however well preserved by tanning.
except after certain processes.
unless made into leather.

02/ Our knowledge about the early use of skins is vague

because there is no evidence.
even though there is some evidence in the form of tools.
although numerous Stone Age skins have survived.
in spite of some written evidence.

03/ Textiles started to be made

- a) long before skins.
- b) at about the same time as skins.
- c) long after skins started to be used.
- d) long before stone tools.

04/ Leather can be made from the skins of

- a) any animals except fish and birds.
- b) any kind of animal.
- c) cattle, sheep, goats, pigs and horses only.
- d) the larger animals only.

05/ The skins of sheep, lambs and ponies are dressed

- a) with the hair or wool still in place.
- b) in one of two different ways.
- c) after the hair or wool has been removed.
- d) with the hair or wool added later.

06/ The difference between a hide and a skin

- a) has never been defined.
- b) depends on the type of tanning process.
- c) is largely a question of size.
- d) varies from country to country.

07/ Cattle hides come mainly from

- a) Africa.
- b) the Americas and Australia.
- c) the Sudan.
- d) Australia and New Zealand.

08/ Skins are usually preserved with salt after stripping

- a) because they cannot be tanned immediately.
- b) to preserve their moisture.
- c) to make them taste better.
- d) to keep insects away.

09/ Unless specially treated, sun-dried skins may be attacked by

- a) beetles.
- b) white arsenic.
- c) D.D.T.
- d) various chemicals.

10/ When the 'crust' leather has been processed by tanning

- a) the 'corium' is discarded.
- b) the 'corium' forms the middle layer.
- c) nothing but the 'corium' remains.
- d) it becomes airtight and waterproof.

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| Time : | Speed : | Comprehension : |
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Dreams – What do they Mean?

Dreams have always held a universal fascination. Some primitive societies believe that the soul leaves the body and visits the scene of the dream.

Generally, however, dreams are accepted to be illusions, having much in common with day-dreams – the fantasies of our waking life. When dreaming, however, one tends to believe fully in the reality of the dream world, however inconsistent, illogical and odd it may be.

100 Although most dreams apparently happen spontaneously, dream activity may be provoked by external influences. 'Suffocation' dreams are connected with the breathing difficulties of a heavy cold, for instance. Internal disorders such as indigestion can cause vivid dreams, and dreams of racing fire-engines may be caused by the ringing of an alarm bell.

Experiments have been carried out to investigate the connection between deliberately inflicted pain and dreaming. For example, a sleeper pricked with a pin perhaps dreams of fighting a battle and receiving a severe sword wound. Although the dream is stimulated by the physical discomfort, the actual events of the dream depend on the associations of the discomfort in the mind of the sleeper.

200 A dreamer's eyes often move rapidly from side to side. Since people born blind do not dream visually and do not manifest this eye activity, it is thought that the dreamer may be scanning the scene depicted in his dream. A certain amount of dreaming seems to be a human requirement – if a sleeper is roused every time his eyes begin to move fast, effectively depriving him of his dreams, he will make more eye movements the following night.

People differ greatly in their claims to dreaming. Some say they dream every night, others only very occasionally. Individual differences probably exist, but some people immediately forget dreams and others have good recall.

300 Superstition and magical practices thrive on the supposed power of dreams to foretell the future. Instances of dreams which have later turned out to be prophetic have often been recorded, some by men of the highest intellectual integrity. Although it is better to keep an open mind on the subject, it is true that the alleged power of dreams to predict future events still remains unproved.

400 Everyone knows that a sleeping dog often behaves as though he were dreaming, but it is impossible to tell what his whines and twitches really mean. By analogy with human experience, however, it is reasonable to suppose that at least the higher animals are capable of dreaming.

498 Of the many theories of dreams, Freud's is probably the best known. According to Freud, we revert in our dreams to the modes of thought characteristic of early childhood. Our thinking becomes concrete, pictorial and non-logical, and expresses ideas and wishes we are no longer conscious of. Dreams are absurd and unaccountable because our conscious mind, not willing to acknowledge our subconscious ideas, disguises them. Some of Freud's interpretations are extremely fanciful, but there is almost certainly some truth in his view that dreams express the subconscious mind.

Adapted from Mosback, 1976: 40

NOM & PRENOM:

Say whether the following statements are true or false according to the information given in the passage.

1. Dreams while we are asleep are quite different from day-dreams.
2. Dreams may be caused by an upset stomach.
3. If you prick someone with a pin, he may dream he has been stabled.
4. Sighted people and those who have never been able to see dream in exactly the same way.
5. Dreaming is probably unnecessary.
6. There is plenty of proof available that dreams foretell the future.
7. Everyone knows that dogs dream just like human beings.
8. Because human beings dream, so may the more intelligent animals.
9. Dreams are not easy to interpret because the original thoughts and ideas are disguised.
10. It is almost certainly true that dreams express the subconscious mind.

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| Time : | Speed : | Comprehension : |
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Cats

The cat has probably been associated with Man since it was first given a place by his fire in return for keeping the cave dwelling free of rats and mice. The relationship between the cat and Man has not been constant, however. Man's attitude has ranged through lack of interest and neglect to the extremes of cruel treatment and admiration.

To the early Egyptians, the cat was a goddess and temples were built in her honour. Probably the most admired of animal deities was Bast, the cat-headed goddess. There was even a city, Bubastis, named after her. Occasionally, Bast was depicted as lion-headed, but the majority of the statues of her show her as cat-headed, often surrounded by sacred cats or kittens.

The Egyptians had great faith in the power of a living cat to protect them from both natural and supernatural evils. They made small ornaments and charms representing cats and the various cat deities. These decorated their homes and were buried with them to ensure that the soul of the dead person was protected on its dangerous journey through the hostile spirit world.

Pious Egyptians always mummified their cats and had them buried with almost as much respect as if they were human beings. At the end of the last century, a cat cemetery was discovered near the site of the ancient city of Bubastis. Here literally hundreds of thousands of little cat mummies were found ranged neatly on shelves. Some were stolen, some destroyed, and antique traders sold many to tourists. Thousands were left.

An Alexandrian speculator finally thought of a way of turning them into money. He offered them for sale as manure and, in 1890 he had a cargo of 180,000 of them shipped to Liverpool. They were sold by auction and the auctioneer actually used one instead of his hammer! They made less than £4 a ton, much less than the value of a single example of cat mummies today.

The ancient Jews believed that when a religious person who had reached a high degree of holiness died, his soul entered the body of a cat and remained there until the cat itself died a natural death. Only then could it enter Paradise.

Exactly the same belief existed in Burma and Thailand until comparatively recently, and beautiful sacred cats were kept in great luxury in the temples. When a member of the royal house of Siam died, his favourite cat was buried alive with him but a small opening was always left for its escape. When the cat emerged, the priests knew that the Prince's soul had safely entered its feline host, and the cat was ceremonially accompanied to the Temple. At the crowning of the young King of Siam in 1926, a white cat was carried by a court official in the procession to the Throne Room. The old King's soul was resting in this cat, and his faithful previous courtiers knew that he would want to be present at the crowning of his successor.

Adapted from Mosback, 1976: 51

NOM & PRENOM :

Select the answer which is most accurate according to the information given in the passage.

01/ Man's attitude towards cats has

- a) always been friendly.
- b) Been constant through the ages.
- c) Always gone to extremes.
- d) been through many changes.

02/ Bubastis was

- a) an Egyptian cat.
- b) an Egyptian city.
- c) an Egyptian goddess
- d) usually depicted as cat-headed.

03/ The ancient Egyptians believed cats

- a) protected them from natural and supernatural evils.
- b) could not affect life in the spirit world.
- c) attacked the souls of the dead in the spirit world.
- d) contained the souls of dead people.

04/ In ancient Egypt cats were

- a) burned after death.
- b) preserved after their death.
- c) buried alive.
- d) decorated with ornaments and charms.

05/ The cat mummies in the cemetery at Bubastis numbered

- a) 180,000.
- b) 1,890.
- c) hundreds of thousands.
- d) millions.

06/ At the end the nineteenth century, thousands of mummified cats were

- a) sold as manure.
- b) used instead of hammers.
- c) re-buried in Liverpool, England.
- d) discovered at Alexandria.

07/ A cat mummy would now

- e) be worth much more than £4.
- f) weigh a ton.
- g) not be worth anything.
- h) be quite a commonplace possession.

08/ The ancient Jews believed

- a) a good man's soul was protected by a cat in the underworld.
- b) a cat's soul entered a good person's body.
- c) a good person's soul entered a cat.
- d) a cat would live only with holy people.

09/ In Burma and Thailand people shared a belief about cats with

- a) the ancient Egyptians.
- b) the ancient Jews.
- c) the ancient Greeks.
- d) most of the civilized world.

10/ At the 1926 Coronation a white cat was

- a) crowned the King of Siam.
- b) believed to be the spiritual guardian of the old king.
- c) cruelly buried while still alive.
- d) given to the new king as a present.

| | | |
|--------|---------|-----------------|
| Time : | Speed : | Comprehension : |
|--------|---------|-----------------|

The History of Chemistry

Primitive man found out by experimentation how to carry out a certain number of simple chemical changes, but under the ancient Egyptian civilization men learned how to work copper, tin, iron and precious metals; knew how to make pottery, glass, soap and colouring agents, and how to whiten and dye of textile fabrics. These arts were the beginnings of the chemical industries of today.

100 The early scientific study of chemistry, known as alchemy, grew up in the first few centuries A.D. at Alexandria in Egypt. There two important things came together: one was the practical knowledge of the Egyptian workers in metals, pottery and dyes; the other was the learning of the earlier Greek philosophers, such as Hippocrates and Aristotle. At the same time alchemy was much influenced by ideas from the East about magic and astrology – foretelling the future from the stars.

200 Greek philosophers regarded debate about the nature of matter as superior to experiment, and some held that all matter was made up of the same four 'elements' – earth, fire, air and water. Many people therefore thought that if these elements could be rearranged, one substance could be changed into another. For instance, a base metal could perhaps be turned into gold. The chief aim of the alchemists was to find a way of doing this.

Alchemy came under Arab influence when the armies of Islam conquered Egypt during the seventh century. The Arabs carried its study into Western Europe when they advanced into Spain. Many Arabic words are still used in chemistry – 'alkali', 'alcohol' and even 'alchemy' itself, which means 'the art of Egypt'. The greatest Arab alchemist was Jabir ibn Hayyan, possibly the same person as Geber, author of two important books on alchemy known from the Latin translations of the thirteenth century.

300 Jabir claimed that mercury and sulphur were 'elements' like the four Greek ones. He said that all metals were composed of mercury and sulphur in different proportions. To change a base metal into gold required the proportions to be changed by the action of a mysterious substance which came to be called 'the philosopher's stone'. Alchemists searched in vain for this substance for several hundred years.

400 Alchemy was studied widely in Europe during the twelfth and following centuries, and attracted the attention of many learned men. Though they were doomed to fail in their attempts to make gold, their work led to the growth of a great deal of new chemical knowledge and of methods of making experiments. Many of the later European alchemists, however, were complete deceivers who preyed upon trusting people by all sorts of tricks, and the subject fell into disrespect. By the first half of the sixteenth century, the aim of the alchemists had changed from the making of gold to the making of medicines. In particular they sought a imaginary substance called 'the elixir of life', a powerful medicine which was to cure all ills, and which some people thought would turn out to be the same substance as
512 'the philosopher's stone'. This phase of chemistry lasted till about 1700.

Adapted from Mosback, 1976: 55

NOM & PRENOM :

Select the answer which is most accurate according to the information given in the passage.

01/ Primitive man

- a) knew nothing about chemistry.
- b) succeeded in carrying out a few chemical processes.
- c) failed to carry out any chemical processes.
- d) knew how to work copper and make pottery.

02/ The practical basis of several modern chemical industries was developed

- a) by the ancient Egyptians.
- b) by prehistoric man.
- c) even before the ancient Egyptian civilization.
- d) in the nineteenth century.

03/ Alexandria was

- a) the birthplace of the early science of chemistry.
- b) the first chemical scientist.
- c) the home of Greek philosophy.
- d) named after the wife of Hippocrates.

04/ The ancient Greek

- a) were superior to the Egyptians in chemical experiments.
- b) were more fond of discussing theories than doing practical work.
- c) were not interested in chemistry.
- d) taught the Egyptians how to work metal, pottery and dyes,

05/ Early alchemists tried to change

- a) the element fire into water
- b) all four elements into mercury.
- c) the future using the stars.
- d) inexpensive metals into gold.

06/ The Arab conquerors

- a) took alchemy to Egypt.
- b) spread alchemy to Western Europe.
- c) learnt 'the art of Egypt' in Spain.
- d) overran the whole of Western Europe.

07/ Jabir ibn Hayyan

- a) extended the Greek theories about the 'elements'.
- b) claimed that all metals were composed of four 'elements'.
- c) discovered 'the philosopher's stone'.
- d) wrote two important books on mathematics.

08/ From the twelfth to the eighteenth century alchemy was

- a) successful in its objectives.
- b) a somewhat disreputable study.
- c) not studied.
- d) the most respected branch of philosophy.

09/ Later alchemists

- a) changed gold into medicine.
- b) changed the philosopher's stone into medicine.
- c) directed their ambitions from gold to medicine.
- d) perfected the 'elixir of life'.

10/ After 1700 chemistry

- a) was not studied.
- b) changed its aims and methods.
- c) did not last.
- d) became unfashionable.

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| Time : | Speed : | Comprehension : |
|--------|---------|-----------------|

Pottery

Pottery is the name given to all kinds of pots and tools made from clay and other minerals when they have been 'fired' that is, hardened by heat in the potter's kiln (oven for baking clay). Articles made of pottery include plates, cups and saucers, cooking dishes, wall and floor tiles, chemical storage jars, bathroom fittings, filters, drain pipes, electrical insulators and ornaments for the home.

100 Pottery is one of the oldest crafts, which began to be practised as soon as man learned to control fire, and long before the melting of metals. It enabled him from very early times to make vessels for storing and cooking food, for carrying water, and for ritual burial purposes. Early vessels were shaped by hand and fired' in a big bonfire by covering them over with dried grass and dead branches, which were then set alight.

A great advance in pottery followed the invention of the potter's wheel and the kiln. It is not certainly known where the potter's wheel was first used, but it is thought that by about 200 3500 B.C. potters in Central Asia were using some kind of wheel. From there its use spread west and east to Egypt, Crete, China – and then to Ancient Greece and Rome.

At fist the wheel was nothing more than a small disc, turned on a pivot by hand, but later it was improved by raising it and providing it with a larger circular platform near the ground as well which could be turned by the potter with his feet. Such a wheel was probably in use in Egypt by about 200 B.C., though this is only a guess; but it was certainly still in use Europe at the beginning of the nineteenth of century. In the eighteenth 300 century, however, the potter's wheel was improved so that it could be worked by a treadle, or turned by an assistant. Modern potter's wheels are power driven.

There are three principal ways articles may be made of pottery. They may be simply shaped by hand. They may be thrown on the potter's wheel and shaped against the spin with the fingers or some scraping tool. Thirdly, the wet clay may be put in a pre-shaped 'form' of plaster-of-Paris.

400 After the pots have been made, they are slowly baked in the kiln. This produces chemical changes in the clay which have a hardening effect. The time taken for firing pottery varies with the size of the kiln and the type of clay. It can take anything from 24 hours to as long as 2 weeks.

If pottery is to hold water, it must be 'glazed', since clay is porous by nature. Glaze consists of the raw materials of glass, ground together and mixed with water to a creamy consistency. The glaze is sprayed on to the pot which is then heated in the kiln again until it is, in effect, covered with a very thin layer of glass. This seals the pores in the clay and 517 given us the versatile table and oven dishes we now so well today.

Adapted from Mosback, 1976: 70

NOM & PRENOM :

Select the answer which is most accurate according to the information given in the passage.

01/ Pottery is the name given to

- a) all kinds of utensils.
- b) all kinds of pots and utensils.
- c) domestic fittings and table dishes.
- d) things made of baked clay or other minerals.

02/ The early making of pottery

- a) pre-dated the discovery of fire.
- b) post-dated the smelting of metals.
- c) was dependent on the control of fire.
- d) avoided the need for storing and treating food.

03/ Before the invention of the potter's wheel

- a) pottery vessels were shaped by hand.
- b) it was impossible to make pottery vessels.
- c) pottery vessels were shaped by heating in a bonfire.
- d) pottery could only be obtained from Central Asia.

04/ The first potter's wheel was invented

- a) In Central Asia.
- b) In Egypt.
- c) In Ancient Greece.
- d) Probably before 3500 B.C.

05/ The ancient Greeks and Romans

- a) did not use the potter's wheel.
- b) learned about the potter's wheel from elsewhere.
- c) did not make pottery.
- d) carried the potter's wheel to Egypt, Crete and China.

06/ Improvements to the potter's wheel

- a) came only in the twentieth century.
- b) have never really been successful.
- c) have been concerned with motive power methods mainly.
- d) ceased after 200 B.C.

07/ A foot-operated potter's wheel was in use in Egypt.

- a) certainly by 2000 B.C.
- b) probably by the beginning of the nineteenth century.
- c) for a short period in the second century A.D.
- d) perhaps around 200 B.C.

08/ The three ways articles can be made of pottery are

- a) spinning, moulding and 'throwing'.
- b) 'throwing', hand shaping and on a wheel.
- c) hand shaping, 'throwing' on a wheel, and moulding in a 'form'.
- d) are becoming increasingly sophisticated.

09/ The time taken for firing pottery varies according to

- a) the type of clay the kiln is made of.
- b) the type of clay and the size of kiln it is baked in.
- c) the type of kiln the pottery is baked in.
- d) atmospheric conditions.

10/ The glaze on a pottery vessel

- a) keeps the clay soft.
- b) prevents the clay from becoming porous.
- c) prevents the clay from allowing moisture to pass through its pores.
- d) makes it more attractive to look at.

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|--------|---------|-----------------|
| Time : | Speed : | Comprehension : |
|--------|---------|-----------------|

The Olympic Games

In ancient Greece athletic festivals were very important and had strong religious associations. The Olympic athletic festival, held every four years in honour of Zeus, finally lost its local character, became first a national event, and then, after the rules against foreign competitors had been abandoned, international. No one knows exactly how far back the Olympic Games go, but some official records date from 776 B.C.

100 The Games took place in August on the plain by Mount Olympus. Many thousands of spectators gathered from all parts of Greece, but no married woman was accepted even as a spectator. Slaves, women and dishonoured persons were not allowed to compete. The exact sequence of events is uncertain, but events included boy's gymnastics, horse-racing, field events such as discus and javelin throwing, and the very important foot races. There was also boxing and wrestling and special tests of varied ability such as the pentathlon, the winner of which was best overall at running, jumping, discus and javelin throwing and wrestling. The evening of the third day was devoted to sacrificial offering to the heroes of the day, and the fourth day, that of the full moon, was set aside as a holy day.

200 On the sixth and last day, all the victors were crowned with holy garlands of wild olive from a sacred wood. So great was the honour that the winner of the foot race gave his name to the year of his victory.

300 Although Olympic winners received no prize money, they were, in fact, richly rewarded by their state authorities. The public honour also made the strict discipline of the ten-month training period worthwhile. In spite of the lengthy training, however runners were known to drop dead from strain at the winning post. How their results compared with modern standards, we unfortunately have no means of telling.

400 After an uninterrupted history of almost 1,200 years, the Games were abolished in A.D. 394, the Christian era, because of their irreligious origin. It was over 1,500 years before there was another such international athletics gathering. The Greek institution was revived in 1896 and the first small meeting took place in Athens. After the 1908 London Olympics success was re-established and nations sent their best representatives. In times of peace, the Games have taken place ever since at four-yearly intervals. In Munich in 1972, competitors from more than 120 countries were watched by huge crowds.

Nowadays, the Games are held in different countries in turn. The host country provides vast facilities, including a stadium, swimming pools and living accommodation, but competing countries pay their own athletes expenses. Athletic competitions are still the main feature, but now many more sports are represented, women compete, the ancient pentathlon, for example, have been modified into a more comprehensive test, and the marathon races, initiated in 1896, are now a celebrated event.

500 The Olympics start with the arrival in the stadium of a torch, lighted on Mount Olympus by the sun's rays. It is carried by a succession of runners to the stadium. The torch symbolizes the continuation of the ancient Greek athletic ideals, and it burns throughout the Games until the closing ceremony. The well-known Olympic flag, however, is a modern idea: the five interlocking rings symbolize the uniting of all five continents participating in the Games.

Adapted from Mosback, 1976: 28

NOM & PRENOM :

Decide which answer best completes the following statements according to the information in the passage.

01/ The first Olympic Games took place

- a) in the seventh century A.D.
- b) certainly before 700 B.C.
- c) over three thousand years ago.
- d) a thousand years ago.

02/ In the final stages of the ancient Olympic Games, any competitor had to be

- a) Greek.
- b) male.
- c) unmarried.
- d) neither a slave nor a foreigner.

03/ The order of athletic events at the ancient Olympics

- a) has not definitely been established.
- b) varied according to the full moon.
- c) was decided by Zeus, in whose honour the Games were held.
- d) was considered unimportant.

04/ During the Games, on the evening before the moon was full,

- a) heroes were sacrificed to Zeus.
- b) large sums of prize money were distributed to the heroes.
- c) all the victors were crowned with garlands.
- d) the heroes were honoured with sacrificial offerings.

05/ Competitors had to train

- a) for four years.
- b) for ten months.
- c) until they collapsed exhausted.
- d) for periods determined by their state authorities.

06/ Modern athletes' results cannot be compared with those of the ancient runners because

- a) details such as times were not recorded in the past.
- b) they are much better.
- c) the ancient runners fell down dead.
- d) the Greek had no means of telling the time.

07/ The continuity of the Olympic Games

- a) was broken in the year A.D. 1200.
- b) has never been broken.
- c) was interrupted for over 1,500 years.
- d) was broken in 1896.

08/ Nowadays, the athletes' expenses are paid for

- a) out of the national funds of competing nations.
- b) out of the prize money of the winners.
- c) by the athletes themselves.
- d) by commercial organizations.

09/ At the beginning of the Games in the host country

- a) a torch is ignited at sunrise.
- b) a lighted torch is brought into the stadium.
- c) relays of runners light their torches in the stadium.
- d) a torch is ignited by the Greek ambassador.

10/ The modern Olympics compared with the ancient ones are

- a) inspired by the same ideals.
- b) completely different in every respect.
- c) more restricted in the variety of events.
- d) too much concerned with international rivalry.

| | | |
|--------|---------|-----------------|
| Time : | Speed : | Comprehension : |
|--------|---------|-----------------|

Appendix G

POSTTEST

Modern Surgery

The need for a surgical operation, especially an emergency operation, almost always comes as a severe shock to the patient and his family. Despite modern advances, most people still have an unreasonable fear of hospitals and anesthetics. Patients do not often believe they really need surgery – cutting into a part of the body as opposed to treatment with drugs.

In the early years of this century there was little specialization in surgery. A good surgeon was capable of performing almost every operation that had been devised up to that time. Today the situation is different. Operations are now being carried out that were not even dreamed of fifty years ago. The heart can be safely opened and its valves repaired. Blocked blood vessels can be cleaned out, and broken ones repaired or replaced. A lung, the whole stomach, or even part of the brain can be removed and still permit the patient to live a comfortable and satisfactory life. However, not every surgeon wants, or is qualified to carry out every type of modern operation.

The scope of surgery has increased remarkably in this century. Its safety has increased too. Deaths from most operations are about 20% of what they were in 1910 and surgery has been extended in many directions, for example to certain types of birth faults in newborn babies, and, at the other end of the scale, to life-saving operations for a person in his eighties. The hospital stay after surgery has been shortened to as little as a week for most major operations. Most patients are out of bed on the day after an operation and may be back at work in two or three weeks.

Many developments in modern surgery are almost incredible. They include the replacement of damaged blood vessels with similar ones made of plastic; the replacement of heart valves with plastic substitutes; the transplanting of tissues (take a tissue or organ from one into another) such as the lens of the eye; the invention of the artificial kidney to clean the blood of urine at regular intervals and the development of heat and lung machines to keep patients alive during very long operations.

All these things open a hopeful prospect for the future of surgery.

One of the most revolutionary areas of modern surgery is that of organ transplants. Until a few years ago, no person, except an identical twin, was able to accept into his body the tissues of another person without reacting against them and eventually killing them. Recently, however, it has been discovered that with the use of x-rays and special drugs, it is possible to take tissues from one person to another which will survive for periods of a year or more. Kidneys have been successfully transplanted between non-identical twins. Heart and lung transplants have been reasonably successful in animals, though rejection problems in humans have yet to be solved.

'Spare parts' surgery, the simple routine replacement of all weak and useless organs by new ones, is still a dream of the distant future. As yet, surgery is not ready for such miracles. In the meantime, you can be happy if your doctor says to you, 'Yes, I think it is possible to operate on you for this condition.'

Adapted from Mosback, 1976: 77

Select the answer which is most accurate according to the information given in the passage.

01/ Most people are afraid of being operated on

- a) in spite of improvements in modern surgery.
- b) because they think modern drugs are dangerous.
- c) because they do not believe they need anaesthetics.
- d) unless it is an emergency operation.

02/ Surgeons in the early years of this century, compared with modern ones,

- a) had less to learn about surgery.
- b) needed more knowledge.
- c) could perform every operation known today.
- d) were more trusted by their patients.

03/ Open heart surgery has been possible

- a) only in the last fifty years.
- b) from prehistoric times.
- c) since the nineteenth century.
- d) since the invention of valves.

04/ A patient can still live a comfortable and satisfactory life, even after the removal of

- a) his brain.
- b) his lungs.
- c) a major organ such as the stomach or one lung.
- d) part of the stomach or the whole liver.

05/ Modern surgeons

- a) do not like to perform operations of the new type.
- b) are not as highly qualified as the older ones.
- c) are obliged to specialize more than their predecessors.
- d) often perform operations which are not really needed.

06/ Today, compared with 1910

- a) five times fewer patients die after being operated on.
- b) 20% fewer of all operation patients die.
- c) 20% of all operation patients recover.
- d) operation deaths have increased by 20%.

07/ Some of the more astonishing changes in modern surgery include

- a) ear, nose and throat transplants.
- b) valveless plastic hearts.
- c) plastic heart valves.
- d) leg transplants.

08/ The main difficulty with organ transplants is

- a) it is difficult to find organs of exactly the same size.
- b) only identical twins can give permission for their organs to be exchanged.
- c) the body's tendency to reject strange tissues.
- d) the patient is not allowed to use drugs after them.

09/ 'Spare parts' surgery

- a) has yet to become a reality.
- b) will be available in the near future.
- c) is only possible for animals.
- d) has been replaced by modern drug treatments.

10/ You can be happy if your surgeon can operate because it means

- a) he thinks your condition may be curable.
- b) he is a good doctor.
- c) he knows you will survive.
- d) you are getting better already.

| | | |
|--------|---------|-----------------|
| Time : | Speed : | Comprehension : |
|--------|---------|-----------------|

Appendix H

The needed Data to Calculate the t-test for the Difference in Reading Speed between the Control and Experimental Groups (Posttest)

| Participants | X₁ | (X₁)² | X₂ | (X₂)² |
|---------------------|-----------------------------------|--|-----------------------------------|---|
| 01 | 123 | 15129 | 121 | 14641 |
| 02 | 124 | 15376 | 171 | 29241 |
| 03 | 87 | 7569 | 177 | 31329 |
| 04 | 97 | 9409 | 102 | 10404 |
| 05 | 130 | 16900 | 103 | 10609 |
| 06 | 98 | 9604 | 151 | 22801 |
| 07 | 82 | 6724 | 152 | 23104 |
| 08 | 82 | 6724 | 160 | 25600 |
| 09 | 105 | 11025 | 103 | 10609 |
| 10 | 99 | 9801 | 132 | 17424 |
| 11 | 125 | 15625 | 101 | 10201 |
| 12 | 76 | 5776 | 164 | 26896 |
| 13 | 74 | 5476 | 158 | 24964 |
| 14 | 117 | 13689 | 108 | 11664 |
| 15 | 104 | 10816 | 122 | 14884 |
| 16 | 127 | 16129 | 85 | 7225 |
| 17 | 151 | 22801 | 153 | 23409 |
| 18 | 73 | 5329 | 129 | 16641 |
| 19 | 117 | 13689 | 131 | 17161 |
| 20 | 98 | 9604 | 119 | 14161 |
| 21 | 89 | 7921 | 75 | 5625 |
| 22 | 101 | 10201 | 131 | 17161 |
| 23 | 105 | 11025 | 150 | 22500 |
| 24 | 101 | 10201 | 131 | 17161 |
| 25 | 128 | 16384 | 128 | 16384 |
| 26 | 104 | 10816 | 127 | 16129 |
| 27 | 88 | 7744 | 152 | 23104 |
| 28 | 86 | 7396 | 130 | 16900 |
| The Sum | $\sum X_1=2891$ | $\sum (X_1)^2 =308883$ | $\sum X_2=3666$ | $\sum (X_2)^2 = 497932$ |

X₁: Reading Speed Scores of the Control Group

X₂: Reading Speed Scores of the Experimental Group

Appendix I

**The needed Data to Calculate the t-test for the Difference in Reading Comprehension
between the Control and Experimental Groups (Posttest)**

| Participants | X ₁ | (X ₁) ² | X ₂ | (X ₂) ² |
|----------------|---------------------------|---|---------------------------|---|
| 01 | 12 | 144 | 14 | 196 |
| 02 | 10 | 100 | 10 | 100 |
| 03 | 10 | 100 | 10 | 100 |
| 04 | 12 | 144 | 08 | 64 |
| 05 | 12 | 144 | 06 | 36 |
| 06 | 06 | 36 | 10 | 100 |
| 07 | 04 | 16 | 10 | 100 |
| 08 | 08 | 64 | 06 | 36 |
| 09 | 12 | 144 | 04 | 16 |
| 10 | 06 | 36 | 10 | 100 |
| 11 | 08 | 64 | 06 | 36 |
| 12 | 08 | 64 | 06 | 36 |
| 13 | 10 | 100 | 08 | 64 |
| 14 | 10 | 100 | 06 | 36 |
| 15 | 16 | 256 | 08 | 64 |
| 16 | 14 | 196 | 08 | 64 |
| 17 | 06 | 36 | 14 | 196 |
| 18 | 40 | 64 | 12 | 144 |
| 19 | 12 | 144 | 06 | 36 |
| 20 | 16 | 256 | 16 | 256 |
| 21 | 16 | 256 | 08 | 64 |
| 22 | 10 | 100 | 14 | 196 |
| 23 | 08 | 64 | 12 | 144 |
| 24 | 06 | 36 | 10 | 100 |
| 25 | 12 | 144 | 10 | 100 |
| 26 | 06 | 36 | 08 | 64 |
| 27 | 08 | 64 | 10 | 100 |
| 28 | 02 | 04 | 06 | 36 |
| The Sum | ∑X₁=300 | ∑(X₁)²= 2912 | ∑X₂=256 | ∑(X₂)²= 2584 |

X₁: Reading Comprehension Scores of the Control Group

X₂: Reading Comprehension Scores of the Experimental Group

Nb. For the sake of simplifying the calculation of the t-test and the correlation coefficient (r), reading comprehension percentages have been converted into scores to escape having large sums.

Appendix J

Computation of The Posttest Correlation Coefficient (r) Between Reading Speed and Reading Comprehension

| Participants | X | Y | x | y | x ² | y ² | xy |
|--------------|-----|----|--------|-------|----------------|----------------|---------|
| 01 | 123 | 12 | 5.92 | 2.72 | 35.04 | 7.39 | 16.10 |
| 02 | 124 | 10 | 6.92 | 0.72 | 47.88 | 0.51 | 04.98 |
| 03 | 87 | 10 | -30.08 | 0.72 | 904.80 | 0.51 | -21.65 |
| 04 | 97 | 12 | -20.08 | 2.72 | 403.20 | 7.39 | -54.61 |
| 05 | 130 | 12 | 12.92 | 2.72 | 166.92 | 7.39 | 35.14 |
| 06 | 98 | 06 | -19.08 | -3.28 | 164.04 | 10.75 | 62.58 |
| 07 | 82 | 04 | -35.08 | -5.28 | 1230.60 | 27.87 | 185.22 |
| 08 | 82 | 08 | -35.08 | -1.28 | 1230.60 | 1.63 | 44.90 |
| 09 | 105 | 12 | -12.08 | 2.72 | 145.92 | 7.39 | -32.85 |
| 10 | 99 | 06 | -18.08 | -3.28 | 326.88 | 10.75 | 59.30 |
| 11 | 125 | 08 | 7.92 | -1.28 | 62.72 | 1.63 | -10.13 |
| 12 | 76 | 08 | -41.08 | -1.28 | 1687.56 | 1.63 | 52.58 |
| 13 | 74 | 10 | -43.08 | 0.72 | 1855.88 | 0.51 | -31.01 |
| 14 | 117 | 10 | -0.08 | 0.72 | 0.0064 | 0.51 | -0.05 |
| 15 | 104 | 16 | -13.08 | 6.72 | 171.08 | 45.15 | -87.89 |
| 16 | 127 | 14 | 9.92 | 4.72 | 98.40 | 22.27 | 46.82 |
| 17 | 151 | 06 | 33.92 | -3.28 | 1150.56 | 10.75 | -111.25 |
| 18 | 73 | 04 | -44.08 | -5.28 | 1943.04 | 27.87 | 232.74 |
| 19 | 117 | 12 | -0.08 | 2.72 | 0.0064 | 7.39 | -0.21 |
| 20 | 98 | 16 | -19.08 | 6.72 | 364.04 | 45.15 | -128.21 |
| 21 | 89 | 16 | -28.08 | 6.72 | 788.48 | 45.15 | -188.69 |
| 22 | 101 | 10 | -16.08 | 0.72 | 258.56 | 0.51 | -11.57 |
| 23 | 105 | 08 | -12.08 | -1.28 | 145.92 | 1.63 | 15.46 |
| 24 | 101 | 06 | -16.08 | -3.28 | 258.56 | 10.75 | 52.74 |
| 25 | 128 | 12 | 10.92 | 2.72 | 119.24 | 7.39 | 29.70 |
| 26 | 104 | 06 | -13.08 | -3.28 | 171.08 | 10.75 | 42.90 |
| 27 | 88 | 08 | -29.08 | -1.28 | 845.64 | 1.63 | 37.22 |
| 28 | 86 | 02 | -31.08 | -7.28 | 965.96 | 52.99 | 226.26 |
| 29 | 121 | 14 | 03.92 | 4.72 | 15.36 | 22.27 | 18.50 |
| 30 | 171 | 10 | 53.92 | 0.72 | 2907.36 | 0.51 | 38.82 |
| 31 | 177 | 10 | 59.92 | 0.72 | 3590.40 | 0.51 | 43.14 |
| 32 | 102 | 08 | -15.08 | -1.28 | 227.40 | 1.63 | 19.30 |
| 33 | 103 | 06 | -14.08 | -3.28 | 198.24 | 10.75 | 46.18 |
| 34 | 151 | 10 | 33.92 | 0.72 | 1150.56 | 0.51 | 24.42 |
| 35 | 152 | 10 | 34.92 | 0.72 | 1219.40 | 0.51 | 25.14 |

| | | | | | | | |
|-----------|-----|----|--------|-------|---------|-------|---------|
| 36 | 160 | 06 | 42.92 | -3.28 | 1842.12 | 10.75 | -140.77 |
| 37 | 103 | 04 | -14.08 | -5.28 | 198.24 | 27.87 | 74.34 |
| 38 | 132 | 10 | 14.92 | 0.72 | 222.60 | 0.51 | 10.74 |
| 39 | 101 | 06 | -16.08 | -3.28 | 258.56 | 10.75 | 52.74 |
| 40 | 164 | 06 | 46.92 | -3.28 | 2201.48 | 10.75 | -153.89 |
| 41 | 158 | 08 | 40.92 | -1.28 | 1674.44 | 1.63 | -52.37 |
| 42 | 108 | 06 | -9.08 | -3.28 | 82.44 | 10.75 | 29.78 |
| 43 | 122 | 08 | 4.92 | -1.28 | 24.20 | 1.63 | -6.29 |
| 44 | 85 | 08 | -32.08 | -1.28 | 1029.12 | 1.63 | 41.06 |
| 45 | 153 | 14 | 35.92 | 4.72 | 1290.24 | 22.27 | 169.54 |
| 46 | 129 | 12 | 11.92 | 2.72 | 142.08 | 7.39 | 32.42 |
| 47 | 131 | 06 | 13.92 | -3.28 | 193.76 | 10.75 | -45.65 |
| 48 | 119 | 16 | 1.92 | 6.72 | 03.68 | 45.15 | 12.90 |
| 49 | 75 | 08 | -42.08 | -1.28 | 1770.72 | 1.63 | 53.86 |
| 50 | 131 | 14 | 13.92 | 4.72 | 193.76 | 22.27 | 65.70 |
| 51 | 150 | 12 | 32.92 | 2.72 | 1083.72 | 7.39 | 89.54 |
| 52 | 131 | 10 | 13.92 | 0.72 | 193.76 | 0.51 | 10.02 |
| 53 | 128 | 10 | 10.92 | 0.72 | 119.24 | 0.51 | 7.86 |
| 54 | 127 | 08 | 9.92 | -1.28 | 98.40 | 1.63 | -12.69 |
| 55 | 152 | 10 | 34.92 | 0.72 | 1219.40 | 0.51 | 25.14 |
| 56 | 130 | 06 | 12.92 | -3.28 | 166.92 | 10.75 | -42.37 |

$$SD_x = \sqrt{\frac{\sum x^2}{N}} = \sqrt{\frac{39060.21}{56}} = 26.41$$

$$SD_y = \sqrt{\frac{\sum y^2}{N}} = \sqrt{\frac{618.96}{56}} = 3.32$$

$$r(xy) = \frac{\sum xy}{(N)(SD_x)(SD_y)} = \frac{903}{56 \times 26.41 \times 3.32} = \frac{903}{4910.14}$$

$$r(xy) = 0.18$$

Computation of the Posttest Correlation Coefficient (r) between
Reading Speed and Reading Comprehension

الملخص

يهدف هذا البحث إلى دراسة العلاقة بين سرعة القراءة والاستيعاب، بالإضافة إلى محاولة معرفة مدى تأثير إدماج تقنية الركض في القراءة على كل من سرعة القراءة و الفهم. وقد انبثق اهتمامنا بهذا البحث من الدور الجوهري الذي تلعبه سرعة القراءة في الفهم باعتبار أن القراءة السريعة و الفهم هما المركبان الأساسيان للقراءة الفعالة.

علاوة على هذا، كثيرا ما يُنظر إلى القراءة البطيئة كعائق يعرقل سهولة القراءة لدى طلاب اللغة الانجليزية كلغة أجنبية، لذلك أضحى تحسين سرعة القراءة هدفا مهما للمعلمين.

و من أجل هذا خصصت هذه الدراسة لإثبات صحة ما يلي :

إن إدماج تقنية الركض في القراءة بإمكانها أن تؤدي إلى تحسين سرعة القراءة دون إحداث انخفاض في مستوى الفهم. و قد أجريت الدراسة الميدانية بجامعة قسنطينة في السنة الدراسية 2007/2006 على عينة بحث من صف سنة أولى ليسانس – ماستر- دكتوراه ، تكونت من 56 طالبا والتي قسمت إلى مجموعة ضابطة و مجموعة تجريبية طبقت عليها تقنية الركض في القراءة إلى جانب عدة إستراتيجيات أخرى و المتمثلة في القراءة التصفحية و القراءة الإلتقاطية أو البحثية، إضافة إلى إستراتيجية توقع الأفكار التي يتضمنها النص قبل الشروع في القراءة.

و لتحديد مدى ارتباط سرعة القراءة بالفهم، تم حساب معامل الارتباط بينهما و الذي دل على ارتباط إيجابي معتدل. كما أثبت الاختبار الإحصائي تحسنا في سرعة القراءة لصالح المجموعة التجريبية دون حدوث انخفاض في مستوى الفهم. و أدت الاستنتاجات المستقاة من هذه الدراسة إلى تقديم بعض الاقتراحات لمعلمي اللغة الانجليزية كلغة أجنبية بغية تحسين سرعة القراءة من أجل قراءة فعالة.

Résumé

Le présent travail de recherche vise à étudier la relation qui existe entre la vitesse de lecture et la compréhension. Notre intérêt pour cette recherche est fondé sur le rôle important que joue la vitesse de lecture sur la compréhension. L'habilité en lecture est une association de rapidité et de compréhension. En outre, le problème qui est fréquemment perçu par les enseignants d'Anglais langue étrangère est que les apprenants lisent trop lentement. Le développement de la vitesse de lecture constitue donc un objectif essentiel pour les éducateurs.

Cette recherche empirique qui a été portée sur un échantillon de 56 étudiants de première année Licence –Master- Doctorat a pour but d'investiguer l'impact de l'intégration d'activités de lectures cadencées accompagnées de certaines stratégies de lectures telles que le balayage, l'écrémage, ainsi que la prédiction en tant que stratégies de pré lecture sur le développement de la vitesse de lecture et la compréhension.

Pour déterminer la nature de la relation existante entre les deux variables de l'étude -la vitesse de lecture et la compréhension, le coefficient de corrélation (r) a été calculé. Ce dernier a révélé une corrélation positive modérée entre ces deux variables. En outre, les résultats obtenus dans les deux tests (pré test et post test) ont été analysés en établissant un test statistique (t test) qui a montré un progrès dans la vitesse de lecture en faveur du groupe expérimental. Le test indique donc une amélioration dans la vitesse de lecture sans diminution au niveau de la compréhension.

Les conclusions tirées de ce travail ont mené à émettre des propositions pour les enseignants d'Anglais langue étrangère, notamment diverses activités et stratégies de lecture qui semblent prometteuses pour favoriser une lecture plus rapide.