Option: Linguistics

Investigating the Usefulness of Mind Mapping in Reading Comprehension. The Case of Master Two English Students at the University of 8 May 1945, Guelma

A Dissertation Submitted to the Department of Letters and English Language in Partial Fulfillment of the Requirements for the Degree of Master in Language and Culture

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I

Dedication

I dedicate my humble dissertation work to the memory of my beloved parents; Linda and

Mahfoud. Although they are no longer in this world, their memories continue to regulate my life.

May God rest their souls in peace.

I also dedicate this to my dearest brothers Samir and Lotfi for their support, love, and

encouragement that inspired me to finish this research.

To my best friends Khawla and Yousra who have supported me throughout the process. I will

always appreciate what they have done. And a special feeling of gratitude for my auntie Amel

who has always been there for me.

I love you all

Riane CHIAKHA

I am Bouaziz Khawla dedicates this work to my beloved mother Leila, and my father Bouaziz

Dreif for their love, support, sacrifices, guidance, and tenderness.

My dearest brothers: Fouad, Fateh, Imed, and Adem.

My beautiful sister Sabah.

My lovely best friend Riane.

My future husband Lotfi and his family.

To all my adorable friends: Manel, Asma, and Ilhem.

To all my family and teachers who believe in me to finish this research.

May God bless you all

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Acknowledgment

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Abstract

English skills are very essential in achieving foreign language proficiency, and reading is one of the most essential skills that students must master. The current study aims at investigating the effectiveness of using the mind maps as a technique in students' reading comprehension. A descriptive qualitative method was followed to reach the objective of the study. A students' questionnaire was designed to collect data. It was submitted to 68 students of master two in the department of English languge, Guelma university. Finally, the investigation findings revealed that the sample learners' are aware towards mind mapping as being an effective method for improving the learners' reading comprehension. Thus, the research hypothesis was confirmed, and positively defended by the respondents.

Keywords: Mind Mapping, Reading Comprehension, Language proficiency.

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List of Abbreviations

RAND: Research and Development

EFL: English as a Foreign Language

I.E: Clarification

SMP: Parigi Moutong Sulawesi

1st: First

2nd: Second

Pc: Personal Computer

%: Percentage

ETC: Etcerta

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General Introduction

Language is a means of communication. Through its use the humans express their thoughts and needs. Studying a Foreign Language is not an easy task for EFL learners. Thus, they should improve their language skills, which may direct them to success in their learning. Reading is one of the skills that helps learners to gain a better understanding of a given Language. However, the majority of English foreign Language learners in the Algerian educational institution from all of its levels, come across many struggles in a simple reading task. Therefore, teachers have to use different techniques that may help learners in overcoming these problems. Accordingly, our research investigates the use of mind mapping technique and its influence on learners' reading comprehension.

1. Statement of the Problem

The study of a foreign language needs a huge effort in each of its basic four skills; listening, speaking, writing, and reading. However, the problem that arises is that many EFL students found difficulty to develop this latter skill in EFL classroom. They often face challengeable and complicated issues, due to their low reading comprehension that is related to their lack of reading habits. Since, most of students face difficulties to comprehend a given passage or a given reading text. In this regard, mind maps can be a helpful way to assist learners overcome reading comprehension problems. In response to this problem, our study will explore:

- What are EFL learners' attitudes towards the use of mind mapping technique to improve learner's reading comprehension?

2. Aims of the Study

The aim of our research is determined in one main objective:

- ✓ To investigate learners' attitudes towards the use of mind mapping technique in Master Two students in Algerian University.

3. Research Hypothesis

We hypothesize that master two students would perceive positive attitudes towards the use of mind mapping technique in fostering the reading comprehension.

4. Research Methodology and Design

4.1. Research Method

The research method used in the study is the descriptive quantitative method, assuring the main aim of our research is through the students' questionnaire. This research tool would provide us with various perceptions and views about the tackled topic. Thus, the targeted goal of the research would be accomplished.

4.2. Population of the Study

The population of our research is defined to include students of Master Two of English Department in the University of 08 May 1945 Guelma. The reason behind choosing Master Two learners is the current issue of the corona virus. We had to work with what is available and attainable during this special period. Besides, Master two learners are supposed to be more knowledgeable when it comes to reading. They read many articles, essays, and books…etc. throughout their academic year especially when it comes to preparing their master dissertations.

4.3. Data Gathering Tools

To test the hypothesis, students' questionnaire research tool would conclude us with full information about the effectiveness of mind mapping and its impact on improving students reading comprehension in EFL classrooms. This tool will provide an in-depth sight; which will allow us to know whether the research achieved its goal or not.

5. Structure of the Dissertation

Our research consists of general introduction, three main chapters, and general conclusion. The first chapter was dedicated to "the reading comprehension". It covers the definition, types, and levels of reading comprehension. It investigated the strategies of reading comprehensions. Also, it explored its role and objectives. The second chapter was devoted to the theoretical foundations of "mind mapping technique". It started with an overview of mind maps definitions, its function, types, and how to design a mind map. It also dealt with the mind mapping and process of reading comprehension. The third chapter is "field investigation". It was concerned with the analysis of the collected data from the learners' questionnaire.

CHAPTER ONE

Reading Comprehension

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Introduction

Teaching and learning a foreign language require mastering the four basic skills. One of the vital skills which is based on collecting, and grasping new knowledge is reading. However, this goal is not easy to rich. Learners must work hard to develop the required abilities, and techniques. This first chapter comprises of different definitions related to reading, and reading comprehension, factors of reading comprehension, processes, theories, the main difficulties of reading comprehension, some effective strategies, teaching the process of reading comprehension in EFL classes, and it will end with the reading purpose.

1.1. Definition of Reading

Reading is a crucial skill in the EFL learning process, and learners should master it to enrich their background, gain vocabulary, grammar and have new knowledge about the foreign language, and its culture. Generally, the word reading refers to the process of obtaining and gathering information from any piece of writing. There are many different definitions suggested by Scholars and proposed from various point of views.

Nutall (1996:4) Defined "reading as the process of getting out of the text as nearly as possible with the message the writer puts into it". (as cited in Solak & Altay, 2014, p. 79). Therefore, reading can be seen as a kind of extracting the intended meaning of a text.

According to the RAND Reading Study Group (2002) reading is "the process of extracting, and constructing meaning through interaction, and involvement with writer language". (as cited in frankel et al, 2006, p. 7). This study group viewed the reading skill as a kind of recognizing the text message from the communication process that occurs between the reader and the written text.

Bloomfield, and Barnhart (2008) declared that "reading involves nothing more than the correlation of a sound image with its corresponding visual image". (as cited in Ahuja, 2007, p. 12). This means for both scholars reading is about the existent link between the audio and the corresponding word.

Flood (1978) stated that "reading is process of interpreting the written symbols". (as cited in Romero, 1985, p. 2). Thus, reading is getting meaning from the written language.

1.1.2. Definition of Reading Comprehension

Reading comprehension is a challengeable ability which goes beyond the linguistic interpretation and decoding to the skill of analyzation and evaluation. According to Collins Dictionary (1979) "comprehension is the ability to understand something" this means to grasp information about it. Whereas, in fact when someone read different complex things the reader will get into set of complicated cognitive processes.

In this concept, Wooley (2011) referred to reading comprehension as "the process of making meaning from text, and to gain an overall understanding of what is described in the text, rather to obtain meaning from isolated words or sentences". (as cited in Wooley, 2011, p. 15). He argued that reading comprehension is about realizing the whole idea that is contained in the written text.

Moreover, Pardo (2004) defined this concept as "a process in which readers construct meaning by interacting with text through the combination of prior knowledge, and previous experiences information in the text, and the stance the readers takes in relation to the text. (as cited in Tennent, 2015, p. 22). In this definition, the scholar focused more on the importance of the reader's background knowledge, that may help in relating, and understanding the context of the text.

In addition, Urquhart and Weir (1998) believed that "reading comprehension is a process of receiving and interpreting information encoded in language from via medium of print". (as cited in Zhang, 2017, p. 36). Thus, reading comprehension can be comprehended as a competence processing, analyzing, and interpreting information, that are presented in a written discourse.

Furthermore, Paris and Hamilton (2009) confirmed that "reading comprehension is only a subset of ill-defined larger set of knowledge that reflects the communicative instructions among the intentions of the author, the content of the text, the abilities, the purpose of the reader, and the context situation of the interaction". (as cited in Zhang, 2017, p. 36). Reading is a type of communication that took place between the writer, the reader, the text, and the context of the conversation.

1.3. Elements Involved in Reading Comprehension

The reading comprehension process includes the main elements which are: the reader who is going to understand, the product that should be understood, and the interaction between the reader and the text where the comprehension concept took place.

1.3.1. Reader

Bachman and Palmer (1996: 63) proposed a framework of specific features that may influence learners' test performances. In this process of reading comprehension both of them suggested that the reader is an essential component in achieving the reading comprehension task. However, the reader can be affected by some personal grades that covers: personal characteristics, topical knowledge, and effective schemata. The personal characteristics involves the age of the reader, sex, native language, and level of education. Concerning the topical knowledge is focused on the

previous knowledge, and experiences of the reader, which they influence his reading comprehension.

Anderson and Pearson (1988) assumed that the type of the knowledge the reader has affect how does s/he analyzes, and understands the text. Besides, the affective schemata are the emotions and attitudes of the learners. In the foreign language learning process readers may be greatly affected by their attitudes toward the language that may lead to good or bad results. (as cited in kong, 2019, p. 17).

1.3.2. Text

The crucial element of the reading skill is the product (text), which may also influence the comprehension success, and the text consists of some factors that are associated in such realization. First of all, the content of a text is very important item in attracting or distracting readers. Second, the text types. There are different types of texts: narrative, descriptive, expository, and argumentative. These texts differ in the way of processing them, which make readers easily or hardly understand.

Texts organization refers to the cohesion of the text structure. Thus, a good reader determines the most important text data, and its nature which may help them in their comprehension need. Third, the text readability is related to the ability of the reader to comprehend a particular text based on its parts: the vocabulary complexity, syntactic one, the length of the sentences, and paragraphs. (as cited in Kong, 2019, p. 18).

1.3.3. The Interaction

The interaction factor refers to the reader and text communication, in which reader uses the

necessary techniques, and abilities to accomplish the reading comprehension activity. (as cited in Kong, 2019, p. 19).

1.4. Reading Comprehension Processes

Reading comprehension is the idea of decoding information from written text to understand this information. There are many different processes provided by scholars, which facilitate reading comprehension. They are discussed by Garbe (2009) which are: the bottom up, the top down, and the interactive processes of reading. He explains them as following:

1.4.1. The Bottom-Up Process

Garbe believed that "the bottom up depicts the reading as mechanical process, in which the reader decodes the ongoing text letter by letter, word by word, and sentence by sentence". According to this latter reading comprehension refers to encoding at the level of the smallest units of the text; letters, morphemes and words. This means that the students learn to recognize the letters together, that form a word, and the words together form the sentences. Thus, they make meaning of the text given by their analyzation of the smallest units. (as cited in Garbe, 2009, p. 89).

1.4.2. The Top-Down Process

Garbe assumed that "the top down processing is reader actively controls the comprehension process, directed by the reader goals, expectations, and the inferencing of the reader background knowledge". (p. 89). This process is concerned with constructing meaning by the use of students' prior knowledge, predictions, and assumptions in order to generate and confirm the understanding of the message.

1.4.3. The Interactive Process

This process is the typical compromise solution as Garbe explained "to understand the notion of interactive, the basic assumption is that useful elements from bottom up, and top down views can be combined in some massively interactive set of processes". (p. 89). Interactive approach is the combination of the elements of the top down and the bottom up processes. For example: a successful reader starts reading the text using the top down strategy to understand the meaning, and then uses the bottom up one to decode complex or new words which they may face, or they can follow the opposite; in which the reader recognizes letter and the words meaning. Thus, they support and ensure their comprehension throughout the use of prior knowledge.

1.5. Reading Comprehension Theories

Despite many theories proposed by researchers, the most important are: the mental representation, cognitive approaches, and content literacy that are discussed by Gilakjani & Sabouri (2016):

1.5.1. The Mental Representation

During the reading process, readers can use this theory to construct a mental comprehension as a key for understanding the text. kintsch (1998) discussed the three levels of the mental representation which are: the surface component, the text base, and the situation model. Firstly, he explained the surface component that is about encoding the words and phrases without meaning. In other words, the reader's main focus is on the outward form of the words and sentences such as: the structure. Secondly, the text base level involves the meaning of the text as it is explicitly expressed, and not the non-existed things. In this level, the readers can use their prior knowledge

to build a coherent mental representation. Thirdly, is the situational model that describes the combination between the text base and the readers background knowledge.

The situational component occurs when the reader creates a meaning by using appropriate and specific prior knowledge, that is related to the text content. (as cited in Gilakjani & Sabouri, 2016, p. 233).

1.5.2. Content Literacy

The content literacy implies the capacity to read, to comprehend and to learn from the topic given in the text. Content literacy consists of three types: general literacy abilities, content specific literacy abilities, and the previous knowledge of the content. The general literacy and the content specific literacy emphasize on the more general knowledge of the text message without any details.

According to McKenna and Robinson (1990) the content of the previous background knowledge of the reader is connected to the text content in order to build the same situational mental representation. (as cited in Gilakjani & Sabouri, 2016, p. 233). Cognitive processes grammar rules, and the process of activating the prior knowledge are automatically, and unconsciously occurred. Concerning the perception, is determined as unconscious process for example: the action of recognizing a dog is a simple and unconscious process. Whereas, problem solving refer to the use of active thinking: like a person wants to remember someone's name need to think consciously.

Kintsch (1992) confirmed that, when someone read without encountering any obstacles in understanding; the process is perception and not problem solving since it is processed easily. He added that this comprehension took place between the perception, and the problem solving. (as cited in Gilakjani & Sabouri, 2016, p. 234).

1.5.3. The Schema Theory

Anderson and Pearson (1984) stated that ''the action of comprehension is highly related to the integration between the previous knowledge, and the new information''. Their idea sheds light on the relation between the macro structure and the micro structure of the text, where the reader analyzes the message sentence by sentence with the prior knowledge help, then organizes a full understanding of the text structure. (as cited in Zhang, 2017, p. 45).

In addition, Barlet (1932) said that an active "schema is representation of numerous instances of similar experiences". (as cited in Wooley, 2011, p. 40). Therefore, in reading comprehension the schema theory represents the logical correlation which includes perceiving and organizing the information existed in the texts. In addition, the help of the background knowledge that is stored in the reader's memory. For example: when reading a text about astronomy the reader will relate what s/he already know about the topic; planets, stars, satellites, galaxies, and heavenly bodies. Thus, the more the reader has lot of information in different aspects, comprehension will be easier achieved.

1.6. Reading Comprehension Difficulties

Al-Jarrah and Ismail (2018) discussed the most familiar difficulties that EFL learners encounter in the reading comprehension process which are:

1.6.1. Inadequate Vocabulary Knowledge

The level of vocabulary knowledge of the learners is related to the reading comprehension level in which the reader can face problems in understanding a text contains unfamiliar words, and scientific, or technical terms. (as cited in Al-Jarrah & Ismail, 2018, p. 33).

1.6.2. Text Complexity

The ability of learners to read fluently in a foreign language is an effective key to ensure a successful understanding of any written text. Also, if the text contains complicated words, a fluent reader can understand them from the entire context. Thus, the lack of this fluency can cause poor comprehension. (p. 33).

1.6.3. Complex Sentences

The sentence complexity can create problems in comprehension, because of the reader's lack of grammar mastery in which learners do not recognize the units of language, and how a correct sentence should be. Also, the loss of comprehension due to the length of the sentences. and most importantly they cannot distinguish the parts of the sentences such as: conjunctions, prepositions, and modifiers. (p. 33).

1.6.4. Text Organization and Concentration

Davoudi and Yousefi (2015) confirmed that the environmental and instructional problems are the main reasons of reading comprehension difficulties. The environmental reason is related to the reader situation during reading, that can be affected because of the unsuitable and inappropriate conditions. For instance: noisy places. In addition to the instructional problem, which refer to the learners' fault in using the effective strategy to get better understanding. (p. 33).

1.6.5. Cognitive Processes

Another difficulty is the syntactic awareness differences among learners, that focuses on the readers' capacity to determine the various linguistic and vocabulary knowledge, and their relation

to the reader's memory. Consequently, the lack of the syntactic awareness, and the learner's concentration leads to unsuccessful comprehension. (p. 34).

1.6.6. Background Knowledge

The prior knowledge is an essential component in achieving the reading comprehension process. Readers who have a lot of information in different concepts are able to understand more than those whose their knowledge is limited. (P. 34).

1.7. Reading Comprehension Strategies

Küçükoglu (2013) discussed a number of reading comprehension strategies that might be used by students to develop their comprehension skills.

1.7.1. Making Connections

A good reader uses the making connection strategy in which learners analyze the text's pieces relying on their prior knowledge. This means making a link between the new information to the previous ones and there are three ways of making connection: text to text connection, text to self-connection, text to world connection. Text to self-connection is when students relate the text information, or events to what they have experienced in their lives, and teachers also can help them by driving questions. Text to text connection is concerned with relating texts to each other based on their common points, events, setting, characters, and even the writing style. For instance: Students can make the connection between texts through the writing style, the nature of characters, or the author views. Finally making text to world connection is when students try to compare the information presented in the text with the real ones, or a given event that may reminds them in some similar ones in their own real societies. (p. 710).

1.7.2. Predicting

Predicting is an important skill in the reading comprehension process, especially in the reading comprehension improvement. The first step that an effective reader must do is to determine the objective of reading, because it is a helpful clue in this strategy. The predicting strategy is to guess the deep meaning of any kind of texts. This one allows learners to use what they already know to make predictions, and connections to the text in order to achieve a successful understanding and interaction with it. This latter, helps learners to rely on the information provided in the text like: the title, pictures, and diagrams for realizing a better prediction and comprehension. (p. 710).

1.7.3. Visualizing

This strategy indicates that students are able to create pictures and images in their heads about what they have read. Visualization is the key to a reader's understanding of the texts. The teachers can guide the learners to imagine this situation, context, and actions trying to draw or write their visualization of the text. (p. 710).

1.7.4. Summarizing

This strategy enables the students to identify the main important ideas, supporting details, basic terms, and ignoring the irrelevant information; which might give students an opportunity to write a brief summary that includes those basic ideas and details. It is an effective skill that organizes and enhances the students reading comprehension. (p. 711).

1.7.5. Questioning

During the reading process, the questioning should be practiced before, during, and after reading. Which allows students ask questions about the text to gather information, clarify, look for

answers, and to build comprehension. The questioning strategy encourages students to think critically and figure out the types of questions provided by the teacher, or by themselves in order to discover the appropriate answer and to facilitates the understanding process. (p. 711).

1.7.6. Inferring

Making inferences is based on the idea of which the readers are able to find, and understand the meaning between the lines of the information, which are not explicitly stated in the text. In this technique students are required to use text information, the students background knowledge, predictions, and assumptions, in order to deduce conclusions about the meaning of the text. (p. 711).

1.8. Teaching Reading Comprehension

Reading is one of the four skills which play an important role in the foreign language learning objective, and to achieve it learners should follow their teachers' instructions. Teaching reading comprehension in the EFL classes requires the need to use the appropriate materials, techniques, and the methods which suits the learner's need. There are three main steps that teachers follow in teaching reading comprehension: pre reading, during reading, and after reading.

First, pre reading step is the warm-up phase where teachers guide, and help learners through some teachings. Pre teaching the learners new vocabulary that is related to the topic provided; the teacher may elicit of the needed terms. For example: introducing a new words related to fiction stories. Such as: witches, beasts, dragons, adventure. Thus, teaching vocabulary before reading is very useful for reading comprehension, because it gives a small insight about the content of the text. (as cited in Pearson et al, p. 610-611).

In addition, enrich the background knowledge of the learners. Teachers provide learners with amount of information in order to create prior knowledge that they will activate it whenever it is needed. Such as: experiences or stories. Most of the teachers and learners rely on such method to improve the reading comprehension ability. In addition, teaching them the use of the analogy element which concerned with making the difference between the familiar and unfamiliar information. (pp. 612-613).

Furthermore, the presence of the pictures in the text help a lot in facilitating the reading comprehension, as it gives the learner predictions about the content. (p. 620).

Second, the during reading step where teachers change their techniques. Tiery and Pearson (1983) assumed that "an aid to comprehension readers and writers might try to visualize a scenario from the vantage point of an eyewitness or character in the story". (p. 622). The reading comprehension improvement related to the inducing imagery, which is concerned with the readers' imagination, visualization and living the situations that existed in the text.

 Third, the post reading step is mainly the phase that focuses on assessing, evaluating the learners reading comprehension, and giving them feedback. Teachers provide students with chance to reinvest their teacher's instructions through post questions task, in which learners try to answer them to test their comprehension. (p. 627).

The feedback is a successful key in enhancing the learners' performances that motivates, and gave them the results about their work. Barringer and Gholson (1979) stated that the feedback of the incorrect answers may strongly and negatively influence the learners' performances. However, Laporte and Voss (1975) said that the feedback increases the performances of the learners with incorrect answers rather than those with correct answers. (p. 628). Consequently, the

comprehension process would be more enhanced via the whole class discussion that creates a source of various information. (p. 634).

1.9. Purpose of Reading

Reading with meaningful purpose may help learners to gain information, monitor their reading, recognizing the most important details, facilitate the comprehension process, and increase readers interest.

Ahuja. P and Ahuja, G, C (2007, pp. 1-2) in their book how to read effectively and efficiently. They focus on directing, and guiding peoples to became more efficient readers. The communication skill of reading works on enlarging people's knowledge, specifically it educates them in different aspects of life, and both of them have concluded the reader's main purposes which are:

- Reading for laughing.
- To re-discover the daily life.
- To travel through imagination.
- To feel with others emotions.
- Reading for curiosity.
- Reading for enjoying the drama events.
- Discover different zones.
- Reading for solving problems.

Conclusion

In this chapter, we have highlighted the importance of teaching and learning reading comprehension in enquiring a foreign language. It is a complex activity that is based on processing,

and analyzing knowledge. Thus, we have tackled various processes and approaches. In addition, we have covered many teaching techniques, scopes, obstacles of reading comprehension, and a lot of ways and methods to overcome these issues.

CHAPTER TWO

Mind Mapping Technique

Introduction

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Introduction

This section gives an elaborated clarification to mind mapping technique and the main issues that are required to its application. It also provides a clear vision about its different characteristics starting with an introduction about the brains' function, the purpose of mind maps, as well as it explains its different usage and how this technique can be used to enhance learners' reading comprehension.

2.1. The Brain's Scope

2.1.1. The Brain and its Hemispheres

The human brain is a very questionable and powerful object. It regulates everything that a person does; the way that a person thinks, behaves, speaks and even feels. Also, it works constantly and contains more electrical beats than mobile phones. (Harrison & Hobbs, 2010, p. 12).

In 1960's Professor Roger Sperry won the Nobel Prize of his research on the brain area. He has found that the human brain consists of two hemispheres right and left. The right hemisphere is responsible for intellectual areas like: rhythm, spatial awareness, gestalt (wholeness), and all what is visual and abstract. Whereas, the left hemisphere is responsible for the mental skills like: words, logic, numbers and the reasoning activities. In his research, he announced that despite that each part of the brain has a different function but one has to manage to use them in the two different areas (Buzan & Buzan, 1994, p.32-33).

It is not inappropriate to call people left-side or right-side in order not to limit the possibilities of the development of the brain and if someone is weak at one sphere. He should improve it (Buzan & Buzan, 1994, p.33).

The following figure shows the two cerebral hemispheres of the human brain and their different functions and skills. It is presented by Buzan and Abbott in the ultimate book of mind maps.
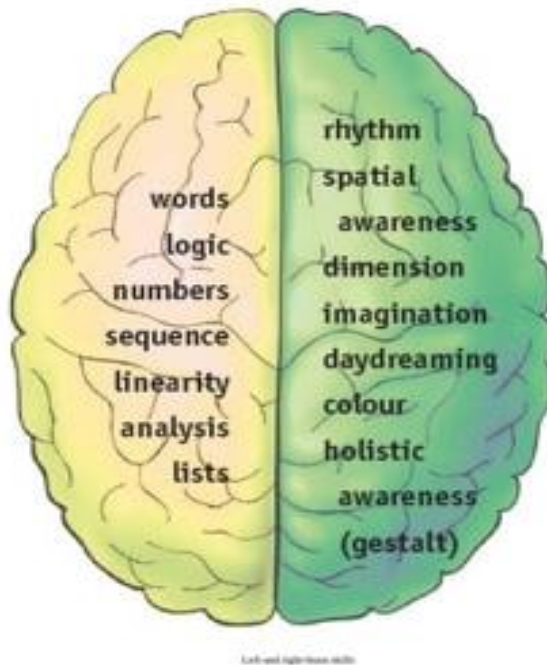
Figure 1: The Human Brain Functions (as cited in Buzzan & Abbot, 2005, p. 54)

2.1.2. Radiant Thinking Introduction

The brain does not think in a linear structure but in fact it works at the level of different directions moving from one subject to another starting with a central idea. Moreover, this way of humans' thinking was compared to the tree branches and clarified as "Radiant thinking". Radiant thinking is from the verb 'to radiate' which means to spread out in all direction from a given central idea. This radiant thinking forms a new way of thinking which is related to mind maps; when it begins with a central idea and each new idea splits and radiates form the central idea which is an endless configuration. (Buzan & Buzan, 1993, p.53-57).

Figure 2: Graphic Representation of a Single 'Unit' of Information in The Brain (Buzan & Buzan, 1993, p. 54).

2.2. Mind Maps

2.2.1. Mind Maps: Historical Overview

Tony Buzan is a researcher, educator, advisor, lecturer, and an author of multiple books. His works has been published in 50 Countries and translated in 20 languages. His story was told by him personally in his book "*the Mind Map Book How to Use Radiant Thinking to Maximize your brain's untapped potential*". The faced issue was that the more he learned hard the worst grades which leads him to be unsatisfied. After that, many questions have aroused how to learn? What

was the nature of his thinking? What are the best techniques for memorizing? Along many other questions. As a result, he has resolved to learn about psychology, Neuro-physiology of the brain, and Neuro-linguistics. Then, he concluded that the human brain has a great efficacy when it is connected with its intellectual skills. For instance: the connection of two cortical skills; words and colors improved his note taking progress which lead him to tackle the relation of radiant thinking and mind mapping in 1971 (as cited in Buzan & Buzan, 1993, p.11-12).

Figure 3: Mind Map by a Father, Sean Adam, helping his daughter to pass her literature exams (as cited in Buzan & Buzan, 1993, p. 143).
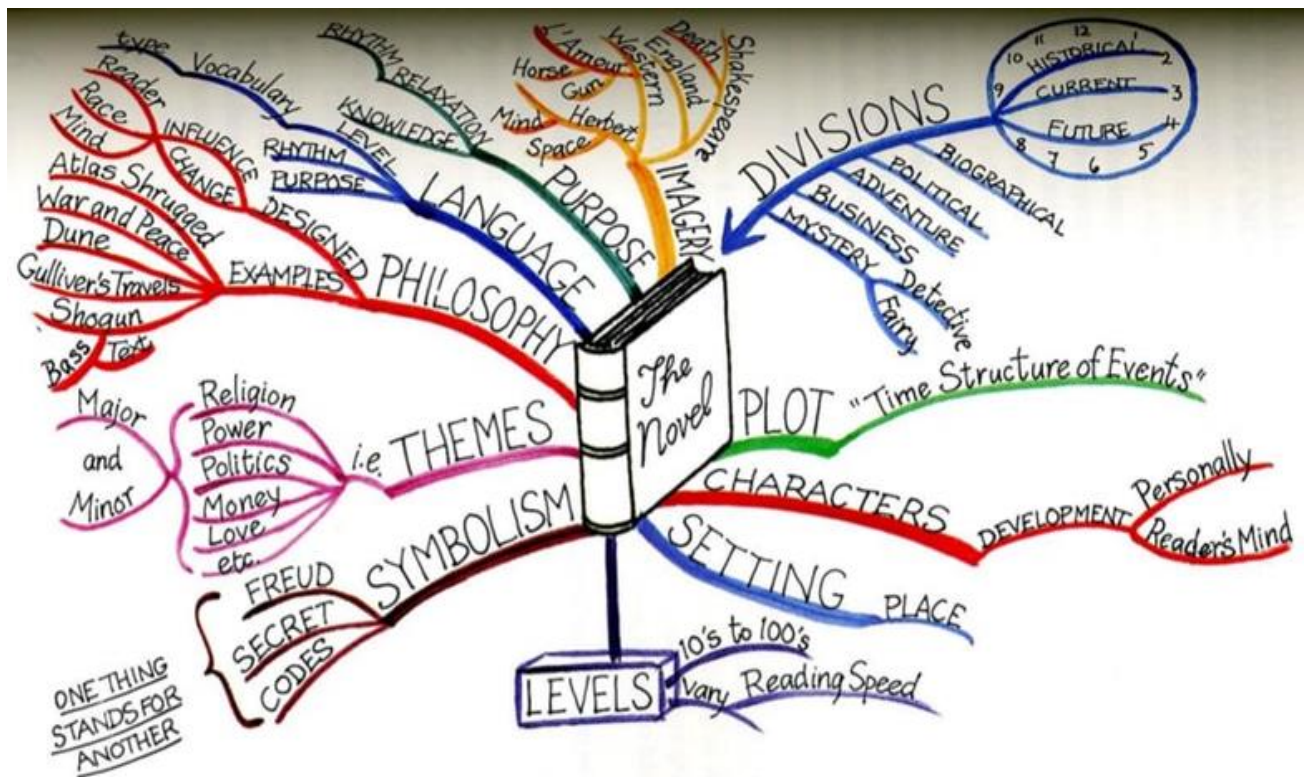
2.2.2 Definition of Mind Maps

The first use of the concept "Mind Map" has been linked to the British author and the founding father of the brain Tony Buzan. He introduced this term in many of his works in 1960's and defines it as a Swiss army knife of the brain and productive thinking tool to give and take information from

the brain. It includes everything you want to do in terms of thinking and analytical skills; the mind mapping would be the right technique for all of that (Buzan & Abbot, 2005, p. 14).

In his book, Tony Buzan & Buzan (1993) stated that the mind map is similar to radiant thinking and both are the reflection of the brain. A mind map is a diagram in which the main idea is in the middle and then is associated with branches of the lesser important ideas. This technique may enhance a person's way of thinking (p. 59).

According to Collins English Dictionary "mind map is a diagrammatic method of representing ideas, with related concepts arranged around a core concept".

Moreover, Budd (2004) has claimed that mind map is an essence of hierarchical knowledge and divisions in which these two start from an arbitrary yet ordered and consistent central idea and picture and the most considerable themes are radiated from the central picture consisting of many branches. Each branch is labeled by a keyword with some elements within the concerned branches. (p. 36).

In addition, Michalko argued that "a mind map is the whole brain alternative to linear thinking. It reaches out in all directions and catches thoughts from any angle". This definition highlights that mind map is about all thoughts that comes to one's mind from various concepts and ideas which are well organized (as cited in Buzan & Abbot, 2005, p. 12).

2.3. Types of Mind Maps

The Mind mapping technique has a complex procedure. Tony Buzan & Buzan (1993) have identified some of the mind mapping types. Some of these types are listed below:

2.3.1. The Artistic Mind

The artistic mind map would influence the mappers' creativity and his visual perception as well as boost his self-confidence. Also, it makes him more aware about himself and his talent which leads the others to better appreciate and recognize his works. This Type is stress relief, enjoyable and makes the mapper feel more gratitude and satisfaction, especially when he can gain money with his talent by selling his mind maps (Buzan & Buzan, 1993, p.116).

2.3.2. The Dyadic Mind Maps

This type is about personal decisions. It permits a person to roam the infinite expanse of the brain and the cortical skills in order to make a decision about some certain topics which makes it easier for that person to review the relevant mind map and choose the best decision (as cited in Buzan & Buzan, 1993, p. 129-131).

2.3.3. The Polycategoric Mind Maps

Tony Buzan & Buzan (1993) describe it as being similar to the previous type. It is a method used to combine information in and out of the brain to augment the probability of the accurate decision making. Also, it helps to form one's own ideas and thoughts (p. 138).

2.3.4. The Mnemonic Mind Maps

This type is authorized to help the memory. Also, by it the proficiency of the memory would be boosted. Thus, it makes the brain more productive. Moreover, it increases one's confidence, motivation, and improves a person's way of the thinking and remembering a certain topic (as cited in Buzan & Buzan, 1993, p. 150-152).

2.3.5. The Creative Thinking Mind Maps

This allows a person to use brainstorming process, the lateral thinking and many others creative thoughts. That leads to clarify the ambiguous information of a person's thinking (Buzan & Buzan,1993, p. 164).

2.3.6. The Self-Analysis Mind Maps

This kind is about one's own self. It is used when a person can help himself or herself by the use of colors, images and the cortical skills. The self-analysis mind maps include every tiny information relevant to one's individual self. (Buzan & Buzan, 1993, p.182).

2.3.7. Electronic Mind Maps

Since the appearing of mind mapping, people were only used it on the paper and colorful pens. Whereas, today's technology gives the ability to the mind mapper to create it via computers due to the great memory capacity, and the significant speed of the computer's software. (Buzan & Buzan,1993, p. 274). The originator of mind map and the electronic map Tony buzan created a website for mind mapping; any person who has a computer or a smart phone would have the ability to enter the website which is : www.imindmap.com or download it from the application store of the mobile. After logging in to your account you could notice that the design of the mind mapping made in the website looks like they're made by hand which exactly what Buzan wanted. Another practical website is named Aviz thought mapper; a PC program for producing simple offers of mind maps with the exclusion of the graphic elements. It can be found on: www.avizsoft.com .

So, electronic mind mapping is a tool that could be useful for the people who are not good in creating and making mind maps. Also, it allows them to have a well-organized mind map in a short period of time.

2.4. The Purpose of Mind Maps

Michalko (2005) in his book "*Cracking Creativity*" claimed that every type of mind map serves a purpose (p. 16). Some of these purposes are as follows:

- Mind mapping encourage a person to use both the right and left parts of the brain; the analytical areas and the intellectual ones.

- Mind maps solve one's cerebral problems.

- Mind mapping centralize the thinking of the learner more on the central ideas.

- Mind maps connect between the separated inputs.

- Mind mapping gives a clear vision on the general and specific themes.

- Mind maps support you to gather information and ideas then compare between them.

- And to transfer those ideas and information from the short-term memory to the long-term memory.

2.5. Designing Mind Maps

2.5.1. Laws of Mind Mapping

Tony Buzan & Buzan (1993) have mentioned a set of laws for the mind maps to be followed in order to improve the ways of mind mapping. (p. 97). These laws are divided into laws of technique, and laws of layout:

2.5.1.1. Laws of Technique

The mind map laws of technique are an essential procedure for mind mapping. These laws are briefly mentioned below:

2.5.1.1.1. Use Emphasis

Emphasis is a major component to enrich one's memory and creativity. Thus, all elements used for it are also used for associations and vice versa. This law can be realized by using a central image, colors, the correct space, and dimensions in a center image (Buzan & Buzan, 1993, p.96-97).

2.5.1.1.2. Use Association

Association is another crucial component in improving one's memory. It is the combination of the humans' brain to its physical experiences and the key to one's memory and his way of understanding. This can be applied by the use of codes, arrows, and colors. (as cited in Buzan & Buzan, 1993, p. 100).

2.5.1.1.3. Be Clear

Clarity indicates that vagueness of information would prevent the memory from improvement. This can be achieved through pointing to all words, printing the key words on lines, and the connection of the preceding line to the following one (Buzan & Buzan, 1993, p. 101-102).

2.5.1.2. Laws of Layout

2.5.1.2.1. Hierarchy

This principle is common to enhance the potential of the humans' brain; especially memory. It means organizing ideas and thoughts in a logical order. (as cited in Buzan & Buzan, 1993, p. 104).

2.5.1.2.2. Numerical Order

In mind maps letters or numbers are used to organize branches in the map. If a mind map used in a speech, an essay or an examination, the mind mapper has to communicate a well-ordered thought

whether chronologically or in order of importance (Buzan & Buzan, 1993, p. 104).

2.5.2. Steps of Mind Mapping

According to Buzan & Abbot (2005) there are seven steps that anyone has to take into account while making mind mapping. They are all stated below:

- A mind mapper must grab a paper, rotate it horizontally and starts drawing on its center. This way will allow the brain to express ideas freely.

- Use a picture in the center of the paper as the main idea because it benefits the mind mapper imagination, thinking and keeps him interested.

- The necessity of the usage of colors while mind mapping because it gives beauty and creates more productivity.

- Draw the main themes from the central idea with branches.

- The mind mapper should add more curved branches and not straight line. These branches must look like a tree because they are more attractive to the eye.

- Utilize only one key word in order to give the brain a chance to improve it and develop new conception.

- Place images on the main branches instead of words because sometimes one picture may convey a meaning instead of stating a thousand words.

2.5.3. The Three 'A' of Mind Mapping

Buzan & Buzan (1993) claimed that any mind mapper should follow the instructions of the Three 'A's which are: "Accept", "Apply", "Adapt". (p. 93).

2.5.3.1. Acceptance

At the initial stage of drawing a mind map, the mind mapper should get rid of any of his ideas that may constraint his way of thinking and creativity and tries to utilize the already mentioned steps of how to make a mind map.

2.5.3.2. Application

At the second stage, the mapper continues the mapping with the application of the previously stated laws; laws of technique and laws of layout.

2.5.3.3. Adaptation

At the last stage, the mind mapper realizes that he or she developed a mind mapping skills because of all of his practices of the different mind mapping. And he can adapt the method that best suits his demands.

2.6. Enhancing Reading Comprehension through Mind Maps

2.6.1. Mind Mapping as an Effective Tool for Reading Comprehension

Many researchers have tackled the issue of the use of mind mapping technique in enhancing the reading comprehension abilities of learners at different educational levels. Some of the founded results of these previous studies are mentioned bellow:

Starting with a research on 1st year students who were learning "English for Communication and reading Skills" at Songkhla Rajabhat University. The study was accomplished by the researcher Panatda Siriphanich (2010) to examine and explore the improvement of reading comprehension through the use of mind mapping as it is shown on his article "Using Mind Mapping Technique to Improve Reading Comprehension Ability of Thai EFL Students University" in which he used

Quantitative and Qualitative method; pre and post-test, questionnaire and an interview. After implementing the previous method and mind maps in the classroom, the results have shown that the mind mapping technique has improved students English reading comprehension. There was a significant change in the post-test results. The majority of students were satisfied with their ability of reading comprehension and enjoyed working in groups, whereas; the others had a serious issue to make a mind map because of their lack of vocabulary (as cited in Siriphanich, 2010, p. 1-10).

Afterwards, Wahyudin (2014) have issued a similar research about "Using Mind Mapping Technique to Improve Reading Comprehension of the Second Year Students" taken from Wirda, Hanafie Sulaiman, Wahyudin article. The researcher applied a pre-experimental research design on 2nd year students of SMP Negeri 2 Kasimbar; she used a pre-test and post-test along with observation. after the analysis of the collected, she noticed that the mind mapping technique is effective in improving students' reading comprehension. It appeared that when it comes to learning English, students seem to have more ability in comprehending with mind maps and they were more interested in participating in the classroom. (p. 1-11).

The results of both studies above and others show that the learners' ability in reading comprehension can be improved by the mind mapping technique though both researchers used different sample of learners and different testing methods.

2.6.2. Mind Mapping Versus Linear Notes

Buzan & Buzan (1993) tackled this matter, hence to make the reader pick the method that suits him or her best. On the first hand, mind maps explore the potentials of the brain through the cortical skills. This provides the mapper with endless ideas and enhances his creativity. Also, they are time saver; they make the mind mapper more focused on the central ideas with a minimum waste of

time. Moreover, the use of colors, images, and even the branches make the mind maps clear and more flexible. Thus, to improve the mind mapper concentration and makes it easier for memorization. On the other hand, linear notes are more complex to the reader, he or she would feel disturbed and lost by searching for the important words and ideas inside a text. In addition, the learner would feel bored while taking the notes because of the single color used in the notes. Furthermore, standard notes make the reader lose his time with the repeated readings and the unnecessary checking of detailed notes. Lastly, this would result in blocking the creativeness of the learner.

Conclusion

Based on what was mentioned above, from learning how to make a mind map; knowing its laws and steps to how to distinguish between its various types. One can notice that it is obligatory to practice this technique to profit from its advantages which will be shown in the next chapter; the field of investigation that will either confirm or not our research hypothesis of whether the use of mind mapping technique to enhance the learners reading comprehension would be fulfilled or not.

CHAPTER THREE

FIELD OF INVESTIGATION

Introduction

3. Students' Questionnaire

 3.1. Population and Sample

 3.2. Research Method

3.3. Data Collection

3.4. Description of the Students' Questionnaire

3.5. Analysis of Results and Findings of the Students' Questionnaire

3.6. Summary of Students' Questionnaire Results

Conclusion

Introduction

This chapter concerned with students' questionnaire analysis in order to gather information about their opinions on the usefulness of the mind mapping application in improving learners' reading comprehension.

The objective to be achieved from this questionnaire is to evaluate students point of views about the research hypothesis. Besides that, to collect data about the most crucial difficulties they face in reading comprehension classes. As well as, to obtain some ideas which promote the importance of the mind mapping technique as a solution for this problems.

In the current chapter, we discuss the covered methodology for testing the study hypothesis. It describes the method used, the population sample, data collection tools, and discussing the results. This statistical data presents in tables, followed by short analysis for each question. Then, we describe the results in a summary and finally it ends with brief conclusion contains the main findings of the research.

3. Students' Questionnaire

3.1. Population and Sample

To conduct the research, we have randomly chosen a sample of 68 students out of 124. all the participants are master two students of the Department of English at the University of Guelma. The sample population were purposively chosen, since Master 2 students are proficient learners, they were supposed to be more experienced in the use and importance of the reading skill and specifically using mind maps in the reading comprehension process. After that, the obtained results can be generalized on the whole population.

3.2. Research Method:

In the conducted study, we attempt to use the descriptive quantitative method in order to process, analyze, and describe the main points related to reading, the reading comprehension process, mind mapping and its importance in facilitating learners reading comprehension. This chosen method is employed in order to test the study hypothesis and to answer the research questions.

3.3. Data Collection:

To accomplish the aim of the study, we use a questionnaire designed for master two students at the Department of English in Guelma University. Since this tool is the most effective in gathering descriptive information. we assigned its questions based on the students' level and their background knowledge.

3.4. Description of the Students' Questionnaire

The students' questionnaire is composed of different questions; yes/no, multiple choice questions, and open-ended questions with free answers. This questionnaire is divided into four sections. The first section involves four questions to investigate students' general information. The second section contains seven questions about the reading comprehension process. The third section deals with four questions about the mind mapping technique. The last section contains five questions about mind maps and its role in improving EFL students' reading comprehension. The questionnaire ends up with an open question for further suggestions; that is to say learners can provide their point of views about the topic.

3.5. Analysis of Results and Findings of the Students' Questionnaire

Question One: What is your gender?

Table 3.1. *Students' Gender*

Gender	Number	Percentage
Male	07	10.3%
Female	61	89.7%
Total	68	100%

The first question was concerned with students' gender. According to the results, the majority of learners are females (86,6%) and 10.3% males only. This shows that most of the research sample are females. This can indicate that females are more attracted to learn Foreign Languages more than males who prefer the scientific fields, and most likely the majority of them prefer to

join to the occupational life specifically the national service.

Question Two: Was English your first choice?

Table 3.2. *Students' Choice to Study English*

Students' Choice to Study English	Number	Percentage
Yes	46	67.6%
No	22	32.4%
Total	68	100%

This table 3.2 shows that the majority of Master Two students (67.6%) have chosen the English as a Foreign Language as their first choice as a field of study. Whereas (32.4%) of them did not

chose it. This may denote that most of the sample students can show positive attitudes when studying the English language.

Question Three: How long have you been studying English?

Table 3.3. Students' *Years Duration*

Years' Duration	Number	Percentage
12 Years	58	87.88%
13Years	08	12.12%
Total	66	100%

This question aims to reveal the years' duration of the student's study of the English language. The majority have been studying English for Twelve years (87.88%). However, only few of them (12.12%) have studied it for 13 years. It can be assumed that the latter group may be because they have missed a year or more.

Question Four: How can you evaluate your level in English?

Table 3.4. *The students' Evaluation of their Level of English Language*

Students' Level	Number	Percentage
Beginner	00	00%
Intermediate	13	19.1%
Advanced	53	77.9%
Proficient	02	02.9%
Total	68	100%

Based on the table above, the results indicate that students' evaluation of their level in English is different from one learner to another. The overwhelming majority (77.9%) have seen their English level as advanced. (19.1%) of them judge their level as intermediate, and (02.9%) have answered with being proficient learners.

From this analysis it is shown that the students' level is not equal or the same. This can be justified by the fact that the students as EFL learners have different learning capacities, preferences, and styles. Also, the majority of them may regard their level of evaluation on the basis on their marks and grades.

Section Two: Reading Comprehension

Question Five: Do you like reading?

Table 3.5. *Students' Attitude towards Reading*

Students' Attitude	Number	Percentage
Yes	51	75%
No	17	25%
Total	68	100%

The table 3.5 indicates that (75%) which is the majority of students likes reading. Therefore, for them reading is considered as crucial and necessary skill. Whereas, (25%) of student's have answered with disliking reading. They additionally state several purposes and reasons for their

claim. Three students claimed that they prefer the listening skill instead of the reading skill. Five others have said that they find reading boring and time consuming. Also two have claimed that they have no problem with reading; they just do not read voluntary and read only when it comes to assignments and lessons given by the teachers. Another two students prefer reading only small

passages and short stories because they have no patience and would love to see the end of a novel or the book rapidly. Their answers call for taking pedagogical actions to help in shifting students' negative attitude towards the reading skill and to further raise their reading awareness.

Question Six: How often do you read?

Table 3.6. *Students' Reading Frequency*

Students' Reading Frequency	Number	Percentage
Always	06	08.8%
Often	22	32.4%
Sometimes	39	57.4%
Never	01	01.5%
Total	68	100%

The results show that the majority of students with (57.4%) have answered that they sometimes read, (32.4%) often read and (08.8%) of them who always read. whereas, (01.5%) who never read.

This may indicate that most of the Master two learners read; which may ensure that they have a desire and can make further effort to ameliorate their reading skills and techniques.

Question Seven: What genre of material do you read?

Table 3.7. Students' *Genres of Reading*

Genres of reading	Number	Percentage
Books	40	59.7%
Literary texts (novels, stories, poems)	32	47.8%

Articles	49	73.1%
Magazines	11	16.4%
Others	10	14.93%

As the results of this table denote that student's answers varied based on what they prefer to read. (73.1%) announced that they read Articles. (59.7%) declared that they prefer reading books. (47.8%) of them said that they read literary texts (novels, stories, poems). (16.4%) said that they read magazines, and (14.93%) said that they read other materials as: Quran, newspapers, comic books, and handouts.

From these statistics we presume that the participants of the sample prefer to read mostly articles because their teachers asked them to do so i.e. academic purposes. Also, it was confirmed in their propositions; they tend to read essays, handouts, and assignments. In addition, we notice that a great number of them tend to read literary texts which would help them enrich their vocabulary and acquire more knowledge.

Question Eight: What obstacles do you face to understand what you read?

Table3.8. *Obstacles faced while Reading*

Obstacles faced while Reading	Number	Percentage
Lack of vocabulary	11	52.4%
Complex Sentences	01	04.8%
Insufficient prior knowledge	09	42.9%

Text complexity	13	61.9%

The table above shows that the students' main problems that they may face while reading any written piece. Therefore, (61.9%) of learners declared that their prominent obstacle was text complexity. (52.4%) of them had a problem with the lack of vocabulary. For the rest of them (42.9%) poor prior knowledge is their main obstacle. While (04.8%) declared that they faced troubles with complex sentences.

Based on the previous question result, the majority of students tend to read academic articles or essays given by their teachers. Thus, the learner's reading is nearly limited. Consequently, from this question results most of learners face more comprehension complexity and poor vocabulary because most of them merely read the materials and subjects they are obligated to read. Basically they lack the effective reading skills that may help in enhancing the reading comprehension process.

Question Nine: What is your purpose from reading?

Table 3.9. *Purpose from Reading*

Purpose from Reading	Number	Percentage
Enjoyment	40	58.8%
Curiosity	36	52.9%
Solving problems	10	14.7%
Academic research	44	64.7%

As it is indicated in the table above (64.7%) of the students read for academic reasons. While (58.8%) read for enjoyment, and (52.9%) read for curiosity. Only (14.7%) of the sample participants' read in order to solve problems. So this implies that most students read to accomplish their academic research. However, others like to read without being forced; they read to have fun, and satisfy their curiosity.

Question Ten: How can you define reading comprehension?

Table 3.10. *Definition of Reading Comprehension*

Option	Number	Percentage%
Answered	55	80.88%
Not answered	13	19.11%
Total	68	100%

In this question most of the respondents (80.88%) define the skill simply with what they know. (19.11%) of them ignore it. It maybe because they felt bored from answering the questions. Accordingly, students' answers for the definition of reading comprehension can be summarized as:

- Reading comprehension is mainly concerned with visual analysis, scanning and apprehending particular piece of writing, books or literary bodies.
- Reading Comprehension in simple words is the ability to decipher a given text and understand a context of the given passage.
- As taking in an amount of information and connecting them together and highlighting the main ones and some of the interesting examples and new ideas.

- It refers to the ability to decontextualize, discern and understand the text both at the literal level or what goes beyond the lines.

- When you really understand what you have read, your ability to analyze the text, and being capable of inferring the hidden messages. Or most simply, when you get the idea or the message and being able of transforming it to someone else.

- Understanding the general meaning of the passage using different reading techniques to pick up the key words and absorb the main idea.

- It is the ability to read, understand and decode a text and figure out the hidden meaning for a particular message.

Based on these definitions, we can notice that most of the students almost have similar understanding of the meaning of reading comprehension that can be summed up as the process of understanding the main ideas and the content of any given passage. Also, this type of descriptive qualitative results' shows that learners are aware that reading comprehension is about analyzing and processing texts.

Question Eleven: what effective strategy do you use to comprehend a given text?

Table 3.11. *Strategies to Comprehend a Text*

Strategies to comprehend a text	Number	Percentage
Making connections	33	48.5%
Predicting	18	26.5%
Visualizing	20	29.4%
Summarizing	15	22.1%
Questioning	25	36.8%

| All the above | 23 | 33.8% |

This question attempts to tackle the effective strategies used to comprehend a given text. (48.5%) of the students opted for making connections, (36.8%) chose questioning, some of them (33.8%) selected all the above, and the rest tend to use visualizing with (29.4%). Predicting (26.5%) and summarizing (22.1%) are the strategies with less percentages.

From the outcomes of this question, we can deduce that the options are with approximate percentages. This means the sample students' may use various strategies in order to understand a given text, though it still the preferred strategy that helped them the most was to make connection and relate ideas together to make a text more understandable. It is also worthy to note that the different types of the reading strategies are all important and they all complete and complement each other's.

Section Three: The Mind Mapping Technique

Question Twelve: How can you define mind mapping?

Table 3.12. Definition of Mind Mapping

Option	Number	Percentage
Answered	57	83.82%
Not answered	11	16.17%
Total	68	100%

The table 3.12 presents the mind mapping definition. (83.82%) of students define the term differently, (16.17%) of them did not answer the question; maybe they just neglect it to finish the answers quickly. Students' definition of mind mapping can be summed up as follows:

- A mind map contains one specific subject that is put in the middle of the map from which different branches are spread where each branch deals with one element... etc. The mind map helps summarize the subject or the lesson or any concept that they become easy to understand and to visualize.

- It is a visual map starts with the main idea on the center until it reaches the end of ideas. It is drawn by colors, curves and sort of circles, the mind mapper can only write a word not a full expression or a full paragraph.

- Is the ability to represent ideas and concepts that are related to a subject in graphical organism.

- It is taking the key words and the main ideas of the text in the form of a map to facilitate decoding the text.

- It is a strategy by which the user makes summarized blueprints that include mainly the crucial points. It helps the user to memorize and focus on the most important things.

- A creative strategy in which a certain idea is turned from a rigid text into a flexible diagram-like illustration.

- The organization of information in the form of drawings and words to make easy to memorize, retrieve, and use this information when needed.

From their definitions we can notice that learners share the same concept about "Mind Mapping" which is perceived as being a creative strategy, tool, technique, graphic and diagram that includes visual information starting from the central idea in the middle of the paper linked to other ideas drawn with branches, curves, and the use of different colors. Also, it is a helpful tool for note taking, summarizing and retention.

Question Thirteen: How often you use the mind mapping technique?

Table 3.13. *The Frequency of the Use of Mind Mapping Technique*

The Use of Mind Maps	Number	Percentage
Always	08	11.8%
Frequently	09	13.2%
Sometimes	21	30.9%
Rarely	25	36.8%
Never	05	07.4%
Total	68	100%

As the table indicates, (36.8%) of the learners' answer using the mind map rarely and infrequently. (30.9%) of them utilize this technique occasionally. Also, it is observed that 09 of the students equivalent to (13.2%) who often use the mind mapping technique. Almost the same percentage and number for the participants who responded with using this tool constantly by (11.8%). And only (07.4%) of the respondents who said that they have never used it.

Thus, we assume that the use of the mind mapping technique is pretty much used by the majority of the participants.

Question Fourteen: Do your teachers use the mind mapping technique in the classroom?

Table 3.14. *The use of Mind Maps by the teacher*

Option	Number	Percentage
Yes	35	51.5%

No	33	48.5%
Total	68	100%

According to the results shown in the table above, (51.5%) of students have answered with 'Yes' for the use of the mind mapping technique by their teachers in the classroom. However, (48.5%) of them have responded with 'No' for the use of mind maps by their educators inside the class. From these results we could perceive that more than the half of the teachers actually apply the mind mapping technique in the classroom.

Question Fifteen: If yes, specify for which purpose?

Table 3.15. *Teachers' Purpose*

Teachers' Purpose	Number	Percentage
To provide you with a mind map of a given text.	05	13.5%
To guide you and let you design your own mind map.	16	43.2%
Both	16	43.2%
Total	37	100%

This table provides us with vision about the students' reasons behind the use of mind maps by their teachers in the class. The majority of them with (86.4%) of students might have seen that their teachers implement this technique for the two reasons; to provide them with a mind map of a given text, as well as to guide them and let them design their own mind map that is to say depending on

the lesson. While, only (13.5%) of learners have answered with the first option to provide them with a mind map of a given text.

This question has reassured the results shown in the two previous answers in which it may imply teacher's perceptions for the important role of mind maps in the teaching and learning process.

Section Four: Reading Comprehension and the Mind Mapping Technique.

Question Sixteen: In which Skill do you mostly resolve to the use of mind maps?

Table 3.16. *Appropriate skill to resolve to the use the Mind Maps*

Skills	Number	Percentage
Reading Skill	42	61.8%
Writing Skill	37	54.4%
Listening Skill	18	26.5%
Speaking Skill	05	07.4%

This question seeks to shed light on which skill the students resolve the most to the use of mind maps. Most of the respondents (61.8%) agree that the reading skill is the most appropriate for them to resolve while mind mapping. (54.4%) opted for the writing skill, (26.5%) chose the listening skill, and (07.4%) selected the speaking skill.

Consequently, we can notice that the majority of students resolve to use the mind map in the reading skill, as a tool to summarize what they read; in order to help them afterwards in reviewing. In addition to improve their writing creativity.

Question Seventeen: Does the previous mind map help you to better understand **"Dyslexia"** text**?**

Table 3.17. *Understanding the text through the help of the Mind Map*

Option	Number	Percentage
Yes	63	92.9%
No	05	07.4%
Total	68	100%

According to the table above, 63 of our sample students (92.9%) have opted for "Yes" that the mind map has helped them to better understand the text of Dyslexia. This can be explained in the coming question. However, only (07.4%) have opted for "No".

This may indicate that this few number of students might be confused whenever they use mind maps; do not know how to structure or catch the key words and ideas well enough. Also, their comprehension would become more disorganized due to their different cognition process.

Question Eighteen: If yes, please choose why?

Table 3.18. *Student's justification*

Student's Justification	Numbers	Percentages
It helps to have a better understanding of the topic.	32	50.8%
It helps to make connection between the main ideas.	29	46%
It helps with memorization and retention.	19	30.2%
It improves productivity.	12	19%

It is a motivating tool for learning.	18	28.6%
All of them.	20	31.7%
Others.	02	03.17%

The purpose of this question is to investigate the effectiveness of mind maps on learners' comprehension of the text of Dyslexia. Many students (50.8%) agreed that mind maps helped them to understand the text better, (46%) answered that it helps them to make connection between the main ideas, all the other choices except one were given almost the same importance with (31.7%), (30.2%) of learners denote that it helps them in memorization and retention, (28.6%) saw it as a motivating tool for learning and (19%) of these students answered that it improves their productivity. The last option was for students to provide other options which has got only (3.17%)

We could notice that students proclaimed that the use of mind mapping technique helped them mainly to have a better understanding of the topic and to organize, and connect their ideas and information according to a particular method. Also, that this tool may help them summarize and grasp what they have read.

Question Nineteen: According to your experience with previous text, to what extent can mind maps be useful for students' reading comprehension?

Table 3.19. *The Usefulness of Mind Maps for Students' Reading Comprehension*

The Usefulness of Mind Maps for Students' Reading Comprehension	Number	Percentage
Very Useful	38	55.9%
Useful	30	44.1%

Useless	00	00%
Total	68	100%

The results revealed show that (55.9%) of the Master Two learners think that the mind mapping technique can be very useful to make them comprehend more the given text. Also, (44.1%) of them agreed that this tool is helpful for them for their reading comprehension process, and there were none (00%) of these contributors have seen the mind map of the Dyslexia text as useless.

This implies that all the sample students agreed that the mind mapping technique can be useful and they perceive its impact as being positive for them to understand the text to a better extent.

Question Twenty: According to you, can the application of the mind mapping technique improve your reading comprehension?

Table 3.20. *Mind Mapping and Reading Comprehension*

Option	Number	Percentage
Yes	62	91.2%
No	06	08.8%
Total	68	100%

The objective of this question is to determine the efficacy of the mind mapping technique in enhancing the learners' reading comprehension. The overwhelming majority (91.2%) of the sample students have declared that the mind mapping technique may improve their reading comprehension. While only (08.8%) of them have stated that this tool wouldn't be a helpful option to achieve the reading comprehension improvement.

Students were asked to justify their answers. They were stated as follows:

- Mind maps can play the role of assessing students' comprehension, and it simplifies the reading process which may ensure the understanding level.

- Because it enhances our memory and our organization skill, and it also helps to learn vocabulary and have a general overview.

- Well, because I used to be a linear person but when I tried this technique, especially when reading and writing, it helped me a lot for example in revision time for exams. It summarized things to you especially the most important ideas. Or when taking notes for example in psychology class, the teacher was so fast while presenting the lesson, so you need to be quick for taking effective notes. Thus, this technique helps a lot and saves time.

- I think that mind mapping may help in improving the reading comprehension of less advanced English learners (beginners). However, it may also help advanced learners to comprehend complicated texts.

- Of course, mind mapping improves reading comprehension. Because, it makes students focus on the general ideas without forgetting them so it is helpful tool for memorization. Also, it saves time; instead of reading the whole text many times to check events or information mind mapping is better to check.

Based on these justifications we can assume that most of the students agreed about that the mind map can improve the learners' reading comprehension and show the mental differences as well as it is a helpful tool for memorization and retention of the information. Only 02 out of 52 justifications are for students who disagreed with the goal that the implementation of mind maps helps students to better understand any given written piece; one explained that he or she understands everything they read so there is no need for him or her to use the mind map and the

other has a different point of view that the mind map is used to facilitate memorization and not much useful when it comes to reading.

Consequently, from the above justifications students seem aware of the obstacles they face in reading, and develop their reading comprehension process through using new application as the mind mapping technique.

Question Twenty-One:

The last question is an open question for students to add any further information, comments and suggestions about the tackled topic. Actually, only (08.8%) of them give their opinions and made some suggestions. Which were summed up as following:

- In my opinion mind mapping is a brilliant technique that provides productivity and effective learning thus it should be taught from early age to students as it can bring out of them many ideas and different perspectives and revive reading and enriches learning and helps students to understand more so they feel curious more, go furthermore, explore more and developed more Overall I'd say mind mapping is the solution for a better learning.

- It is developed by a British scholar specialized in memory matters whom I couldn't recall his name. He died recently engendering a great loss for academic research.

- Mind mapping is a useful tool in enhancing reading comprehension since it helps in brainstorming the ideas connected to a given reading material and organizing them, the latter helps in memorizing what we have read and to be able to develop more ideas in addition to full comprehension of text.

- For me, mind maps are effective for various reasons. You can use them for brainstorming, note-taking, gathering and presenting information and ideas, organizing thoughts, planning, studying, and for lots of other things. You just need to start using the mind mapping tool you find most practical and convenient and start mind mapping.

From these proposed suggestions and opinions, we noticed that students are aware of the practicality of mind mapping to enhance the reading comprehension process, and the importance of the reading skill. Since that any learner would encounter the need to read in different aspects in his whole educational path.

3.6. Summary of Students' Questionnaire Results

The aforementioned results of the students' questionnaire show that the students realize the meaning of reading comprehension. Which is "the ability to analyze and decode the meaning of any particular text". The vast majority of students tend to read different materials such as; books, articles, essays, magazines and literary texts (novels, stories and poems).

In addition, the students seem to be very conscious of the main obstacles and difficulties they encounter while reading. They also seem to know that the reading strategies are very effective in solving such problems like: making connections, predicting, visualizing, summarizing and questioning.

Hence, it can be said that the learners are aware of the necessity of developing the reading comprehension skill since they need it mainly for academic purposes.

Regarding the reading comprehension process, students also share the same idea about defining the mind mapping technique declaring that "the Mind Map is a visual diagram that helps in

structuring ideas and information". Furthermore, students assumed that their teachers often use this latter to present a text, or to give them the chance to design their own mind maps.

Consequently, the overwhelming majority of our sample students show a high consciousness on the use of the mind mapping technique in improving the students reading comprehension. Besides that, this application can benefit and enhance the learners writing skill, their critical thinking, and it raises their productivity and motivation.

Conclusion

The findings, students' answers, and data found confirmed our research hypothesis. students show positive attitude towards using mind maps as a solution to improve their reading comprehension process. Based on student responses we have discovered that most of them had multiple reading comprehension difficulties. In addition, students are highly aware about the importance of mastering the reading comprehension skills, in order to ensure their success in the foreign language learning proficiency. Moreover, this mind mapping tool is very useful for other fundamental abilities; as the writing skill, vocabulary, spelling, critical thinking, and brainstorming. Therefore, the EFL learners agreed to use the new effective technique which is mind maps which works on reinforcing the students' reading comprehension.

General Conclusion

1. Concluding Remarks

The current study examines the impact of using the mind maps to improve the EFL learners' reading comprehension. The findings of the study indicate the significant contribution of the mind mapping tool on the reading comprehension process. Based on the data analysis of the student's questionnaire, we have concluded that learners are fully aware of the important role of the reading skill in their academic process, and their daily lives as well. In addition, they need to know, and practice different methods, and techniques which may improve their reading comprehension capacity.

Furthermore, students show high awareness that mind maps are new, active, creative, easy, and vivid strategy that may be useful to develop the reading comprehension process in the Algerian colleges. Besides that, they also confirmed that this tool can help to improve the learners' spelling, and enrich their vocabulary.

2. Pedagogical Implications and Recommendations

The major goal in the present research is to improve the students' reading comprehension, and provide a suggestion to use the mind mapping technique.

Based on the current results the following might be some potential pedagogical implications and recommendations to support the aimed objective:

➢ Proficient Teachers should be more creative to make learning and teaching more attractive, and interesting. Specifically, they have to change the traditional tasks, and tests of assessing reading comprehension.

➢ Learners should read more different materials, and in various aspects thus, reading will become an easy daily habit.

➢ Teachers should try to use different methods, and approaches in teaching reading.

➢ Teachers should take into consideration the learners individual differences, learning styles, interests, attitudes, and their capacities which may help them to select the appropriate teaching methods.

➢ Assessing reading comprehension through different tools.

➢ Both students and teachers should encourage group work in reading comprehension tasks, that can help in exchanging ideas, and knowledge; for instance, assigning a role for each member in the group to accomplish an organized work.

➢ Teachers should focus on using and practicing various reading comprehension strategies in the classroom.

➢ Creating a motivating environment to help learners to show their abilities.

➢ Teachers should be careful in the products selection (choosing reading texts have to meet the learners' needs).

➢ Mind mapping is an active, new, and creative tool in the EFL Algerian classes; which includes colors, pictures, and graphics. It could be a good way to understand the details, and grasping new terms; since it is considered a note taking technique.

➢ Both teachers and students should raise their awareness on the mind maps' benefits on improving student's reading comprehension. consequently, we have noticed positive acceptance by students about its effectiveness on improving the reading comprehension capacity.

Based on the present results there are potential suggestions for further research including: adopting new tools, instructions, techniques, and tasks to develop reading comprehension.

In addition, rely on a new technological and modern ways to teach reading such as the audio reading which may help in improving learners' thinking, and more importantly their listening skills.

Furthermore, focus more on studying the difference of the students' level, which may impact the reading skill on the students' outcomes.

3. Limitation of the Study

In fact, to conduct the present study we have suffered from many problems that have limited the investigation of the results. They are as the following:

1. The major one was the emergence of the corona virus (Covid19). In which, this latter caused many difficulties:

    ➢ Commitment t to take the necessary measures to limit the spread of the virus.

    ➢ Studies have been suspended since March, 2020.

    ➢ The compulsory home quarantine that obliged us to change the practical tools into an online questionnaire because of the issue of closing many educational institutions.

2. We encountered some difficulties in collecting data specifically we did not reach the wanted number of answers, it was hard job to collect answers online; even though we posted the questionnaire in a social media groups and send it via emails to our master two colleagues. Besides that, there are some questions that students did not answer.

3. We could not attend reading sessions in order to observe, analyze, and evaluate learners reading skills.

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<p style="text-align:center">APPENDICIES</p>

Appendix One

<p style="text-align:center">Student's Questionnaire</p>

Dear students,

This questionnaire is conducted to investigate the effectiveness of mind mapping in improving students reading comprehension. We would highly appreciate if you answer the following questions as your answers are very important for the validity of our research. Please put (X) in the appropriate box(es) or give full answers on the broken lines.

Chiakha Riane

Bouaziz Khawla

Departement of English

Univarsity of 8 Mai 1945, Guelma

Section One: General Information

1.Gender:

Male ☐

Female ☐

2. Was English your first choice?

a. Yes ☐

b. No ☐

3. How long have you been studying English?   …….. years

4. How can you evaluate your level in English?

a. Beginner ☐

 b. Intermediate ☐

c. Advanced ☐

d. Proficient ☐

Section two: Reading Comprehension

5. Do you like reading?

Yes ☐

No ☐

If no, please Justify……………………………………………………………………………….

6. How often do you read?

a. Always ☐

b. Often ☐

c. Sometimes ☐

c. Never ☐

7. What genre of material do you read?

a. Books. ☐

b. Literary texts (novels, stories, poems). ☐

c. Articles. ☐

d. Magazines. ☐

e. Others, please specify…………………………………………………………………………

8. what obstacles do you often face to understand what you read?

a. Lack of vocabulary. ☐

b. Complex sentences. ☐

c. Insufficient prior knowledge. ☐

d. Text complexity. ☐

9. what is your purpose from reading?

a. Enjoyment ☐

b. Curiosity ☐

c. Solving problems ☐

d. Academic research ☐

10. How can you define reading comprehension?

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

11. what effective strategy do you use to comprehend a given text?

a. Making connections ☐

b. Predicting ☐

c. Visualizing ☐

d. Summarizing ☐

e. Questioning ☐

f. All the above ☐

Section Three: The Mind Mapping Technique

12. How can you define Mind Mapping?

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

13. How often you use the Mind Mapping technique?

a. Always ☐

b. Frequently ☐

c. sometimes ☐

d. Rarely ☐

e. Never ☐

14. Do your teachers use the Mind Mapping technique in the classroom?

a. Yes ☐

b. No ☐

15.If yes, specify for which purpose?

a. To provide you with a mind map of a given text. ☐

b. To guide you and let you design your own mind map ☐

c. Both. ☐

Section Four: Reading Comprehension and the Mind Mapping Technique

16. In which skill do you mostly resolve to the use of mind maps?

a. Reading skill ☐

b. Writing skill ☐

c. Listening skill ☐

d. Speaking skill ☐

17. Does the previous mind map help you to better understand **"Dyslexia"** text**?**

a. Yes ☐

b. No ☐

18. If yes, please choose why:

a. It helps to have a better understanding of the topic. ☐

b. It helps to make connection between the main ideas. ☐

c. It helps with memorization and retention. ☐

d. It improves productivity. ☐

e. It is a motivating tool for learning. ☐

f. All of them. ☐

h. Others, please mention ☐

………………………………………………………………………………………………

19. According to your experience with previous text, to what extent can mind maps be useful for students' reading comprehension?

a. Very useful

b. Useful

c. Useless

20. According to you, can the application of the Mind Mapping technique improve your Reading Comprehension?

a. Yes

b. No

Please justify your point of view

……

……

Please, feel free to add further information about this topic.

……

……

Thank you for your cooperation

Appendix Two

Text of Understanding Dyslexia

Here is a sample of a text to be read and below it you will find its proposed mind map. Please try to read it and have a look at its mind map before answering the questionnaire

The Text: Understanding Dyslexia

Dyslexia is most commonly associated with trouble learning to read. It affects a child's ability to recognize and manipulate the sounds in language. Kids with dyslexia have a hard time decoding new words, or breaking them down into manageable chunks they can then sound out. This causes difficulty with reading, writing and spelling. They may compensate by memorizing words, but they'll have trouble recognizing new words and may be slow in retrieving even familiar ones.

A young person with dyslexia may: struggle with learning even simple rhymes, have a speech delay and trouble following directions. Repeat or omit short words such as *and, the, but*. and find it difficult to tell left from right.

In school, children with dyslexia are likely to: have difficulty sounding out new words, lack fluency compared to other children their age, reverse letters and numbers when reading (read *saw* as *was*, for example). Find it difficult to take notes and copy down words from the board, struggle with rhyming, associating sounds with letters, and sequencing and ordering sounds. Stumble and have difficulty spelling even common words; frequently they will spell them phonetically (*hrbr*instead of *harbor*) and avoid being called on to read out loud in front of classmates Become tired or frustrated from reading.

Dyslexia affects children outside of school as well. Kids with dyslexia may also: Find it difficult to decode logos and signs, struggle when trying to learn the rules to games, have difficulty keeping track of multi-step directions, struggle with getting the hang of telling time. Find it especially challenging to learn another language become incredibly frustrated, which can affect their mood and emotional stability.

Martinelli, K. (2020, April 04). *Understanding Dyslexia*. Retrieved from

https://childmind.org/article/understanding-dyslexia/

Appendix Three

Dyslexia's Mind Map
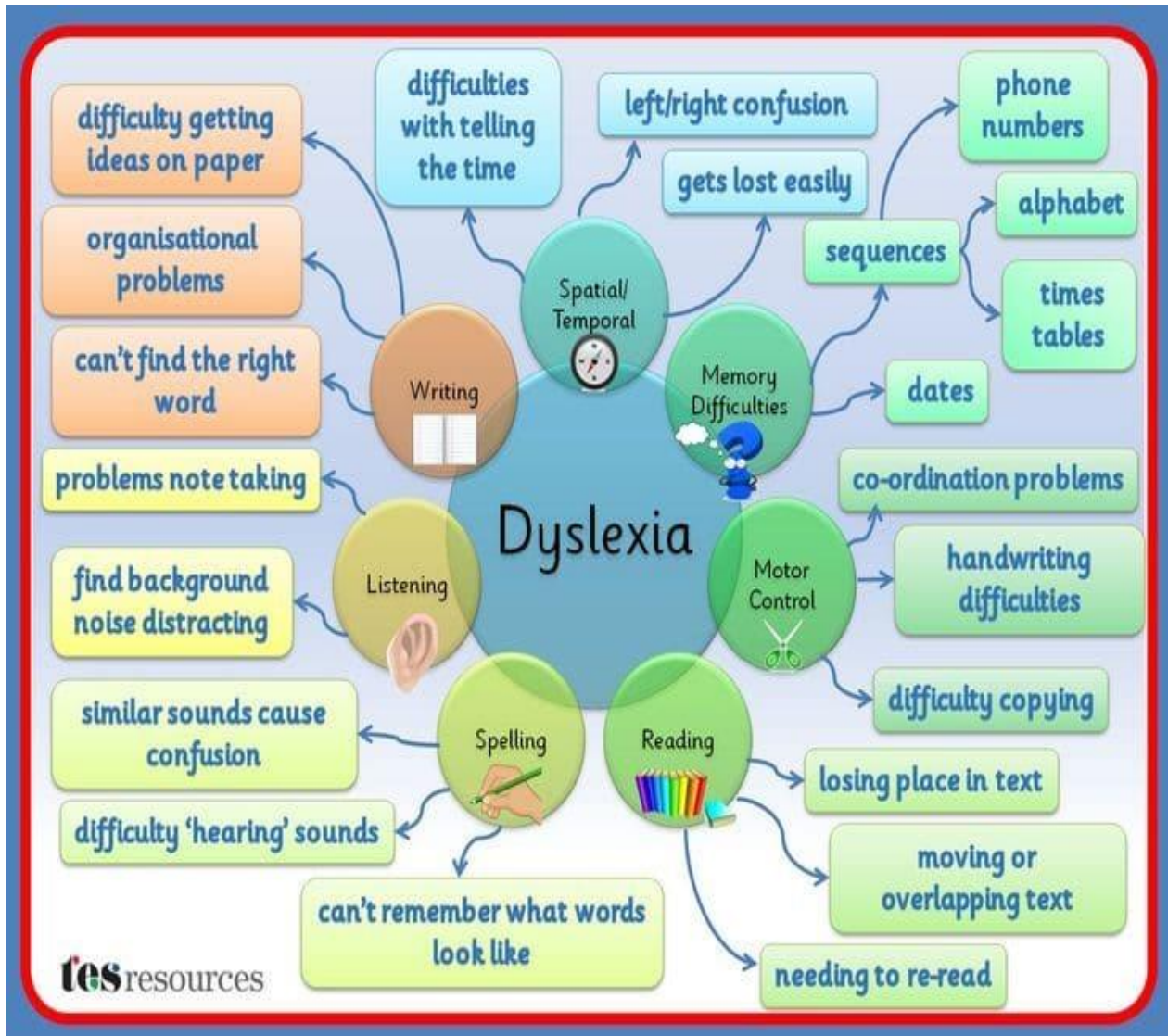
Taken from: dyslexiacoachnj.com

الملخص

تعتبر مهارات اللغة الإنجليزية ضرورية للغاية لتحقيق إتقان اللغة الاجنبية، والقراءة هي واحدة من أهم المهارات التي يجب على الطلاب إتقانها. يهدف البحث الحالي إلى التحقق من فعالية استخدام الخرائط الذهنية كأسلوب في فهم القراءة لدى الطلاب. تم اتباع الأسلوب الوصفي النوعي للوصول الى الهدف من الدراسة، حيث تم تصميم استبيان للطلاب لجمع البيانات. تم تقديمه ل 68 طالب من قسم ماستر اللغة الانجليزية بجامعة قالمة. حيث كشفت نتائج تحليل البحث ان عينة طلاب الدراسة أظهرت موقف إيجابي تجاه الخرائط الذهنية باعتبارها وسيلة فعالة لتحسين فهم القراءة لديهم. وبذلك تم تأكيد فرضية البحث والدفاع عنها بشكل ايجابي من قبل المبحوثين.

الكلمات المفتاحية: الخرائط الذهنية، فهم القراءة، اتقان اللغة.

Résumé

Les compétences linguistiques d'anglais sont absolument essentielles pour maîtriser la langue étrangère, et la lecture est l'une des compétences les plus importantes que les étudiants doivent développer. La recherche actuelle vise à vérifier l'efficacité de l'utilisation des cartes mentales comme technique de compréhension de lecture des étudiants. Lorsqu'un questionnaire a été conçu aux étudiants pour collecter les informations, il a été soumis à 68 étudiants de Master deux département d'anglais Guelma, université. Les résultats de l'analyse de recherche ont montré que les étudiants de recherche ont montré une attitude positive vers les cartes mentales comme un moyen efficace pour améliorer leur compréhension de lecture. Ainsi l'hypothèse de recherche a été confirmé et les répondants en défendu positivement.

Les Mots Clés : Les cartes mentales, Compréhension de lecture, La maîtrise de la langue.