The Use of Mind Mapping Strategy in Teaching Reading Comprehension

The Case of Third Year teachers at Khanchoul Ali and Kerdoud Mohammed Secondary Schools in El Milia-Jijel

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for the Master Degree in Didactics**

Submitted by: **Supervised by:**

Khadidja KHALDI   **Pr. Ammar BOUKRIKA**

Hanane BOUAKOUCHE

Board of Examiners:

Chairperson: Mrs. Selma BOUHALI   University of Mohammed Seddik Ben Yehia, Jijel

Supervisor: Pr. Ammar BOUKRIKA   University of Mohammed Seddik Ben Yehia, Jijel

Examiner: Dr. Fateh BOUNAR   University of Mohammed Seddik Ben Yehia, Jijel

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Dedication

In the Name of Allah the Most Merciful, the Most Compassionate

This humble piece of work is dedicated to:

My dear father **SACI** who I wish him speedy recovery and to leave the hospital as soon as possible, I can not thank you enough for all that you have done for me, I really hope that I made you proud.

My lovely mother **Sassia**, thank you so much for your love, caring and continuous prayers. May the Almighty Allah keep you safe from harm.

My beloved brothers **Radoine, Samir, Ali, Yesser** and **AbdErrahim** for their moral and financial support during this work.

My partner, my roommate, and dear friend **Khadidja**with whom I shared this journey.

My gentle colleagues and my beloved pupils in the Mosque.

Hanane

Dedication

In the name of Allah, most gracious, most merciful, praise is due to Allah alone.

This work is dedicated to:

My beloved mother, the light of my eyes, the source of my success.

My father, may Allah have mercy on him.

My dear brothers: **Zouhir**, **Bader**, and **Chemseaddine.**

My dearest cousins: **Moufida**, **Hasna**, and **Madiha.**

All my uncles, aunts, and all the members of my family **Khaldi** and **Boulaacheb.**

My partner, my dearest friend **Hanane.**

My dearest teacher of English **Grine Nadia.**

To all my friend whom I spent the wonderful moments: **Samira, Fadila, Ilhem, Ibtissem, Chahira, Zehra, Zoza, Rokia.**

Khadidja

Acknowledgements

Abstract

Reading is a skill that requires the interaction between the reader and the text in which the former integrates previous knowledge with a number of skills and strategies to interpret the meaning of the written passage. Hence, reading strategies are very essential to ensure learners' reading comprehension. Accordingly, the present study seeks to investigate the use of Mind Mapping as a strategy to improve learners' reading comprehension in an Algerian context. This research also aims to confirm or reject the following assumptions: secondary school teachers use Mind Mapping strategy in teaching reading, secondary school teachers follow the rules of Mind Mapping strategy, Mind Mapping plays an important role in teaching reading, fourth, and secondary school teachers hold a positive attitude towards the use of Mind Mapping as a reading comprehension strategy. To verify the validity of the aforementioned assumptions, a teacher interview and a classroom observation were used as data collection tools. The interview was conducted with four third year secondary school teachers at Khanchoul Ali and Kerdoud Mohammedin El-Milia, Jijel, and the classroom observation was conducted in the same secondary schools during six sessions on third year secondary school learners of two streams: the letters and foreign languages stream and the letters and philosophy stream. The findings showed that the first three assumptions were disconfirmed while the fourth one was confirmed. Therefore, it is highly desirable to take into consideration the pedagogical recommendations provided at the end of this research.

Key Words: Mind Mapping, Reading, Reading Comprehension

List of Abbreviations

DIME: Direct and Inferential Mediation Model

EFL: English as a Foreign Language

Ibid: Ibidem, indicates a reference to the same source as the previous one.

ICTs: Information Communication Technologies

i.e: That is to say

KISS: Keep it Simple Straightforward

n.d: No Date

p: Page

PDP: Pre-reading, During reading, Post-reading

Q: Question

RS: Reading Strategies

SSR: Sustained Silent Reading

TPS: Think Pair Share.

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General Introduction

1. The Literature Review

In the Arab world, where English is taught as a foreign or second language, studies have been conducted on Mind mapping as a strategy used to improve students' speaking and writing. For instance, in 2011 Al Naqbi worked on the use of Mind Mapping to develop writing skills in UAE schools; his study found out that Mind Mapping might impact learners' abilities, thanks to which they can "plan and organize their ideas for writing tasks under exam conditions". The study also revealed that the use of the Mind Mapping strategy can help in developing learners' cognition skills and aid in information recovery in an assessment situation. For his part, Mirza (2016), in his work entitled "The use of Mind mapping strategy to improve students' speaking ability" at the Faculty of Tarbiyah and Teacher Training, concluded that almost all students had a positive stance toward the use of the Mind mapping strategy with regard to the enhancement of their speaking skill as the strategy helped them better organize their ideas and gain newer vocabulary, realizing all the more that they became more fluent in speaking. Nevertheless, very few studies, to our knowledge, have been conducted on the use of Mind mapping as a strategy to improve learners' reading comprehension at schools in the Arab world.

2. Statement of the problem

The teaching of the English language is based on teaching the four skills, one of the most important of which is reading. The process of teaching reading can be difficult, boring, or lacks entertainment. On the other hand, it can become easier, more effective and more enjoyable if some conditions are successfully met. This depends on understanding how the human brain works along with the strategies used in teaching reading to improve learner's reading comprehension. The latter is one of the aspects

that should receive greater attention from teachers and be practiced frequently by learners because many secondary school learners face problems in comprehending what they read and soon become bored or lost while reading. Also, secondary school teachers face difficulties in making their learners understand texts and that they attempt to use different strategies to cope with those difficulties. Among those strategies, one deserves to be addressed. Developed by Tony Buzan, this strategy is known as Mind Mapping. It can assumingly increase the learners' ability in note-taking and is thought to be an effective tool for summarizing, understanding and recalling information. Also, Mind Mapping reflects the natural way the human brain works because it makes a combination between images, colours, keywords and ideas.

3. Aims of the study

This study aims at investigating the use of Mind Mapping strategy and its role in reading sessions and exploring teachers' attitudes towards the use of Mind Mapping as strategy in teaching reading comprehension.

4. Research Questions

In order to address the problem stated above and reach the aims set in the previous section, this study will attempt to answer the following four questions:

1**.** Do Algerian secondary school teachers use the Mind Mapping strategy in teaching reading?

2. If the Mind Mapping strategy is used in the Algerian secondary schools, do teachers comply with its rule?

3. If the Mind Mapping strategy is used in the Algerian secondary schools, what role does it play in the classroom?

4. What attitude do Algerian secondary school teachers hold towards the use of Mind Mapping as a reading strategy?

5. Assumptions

To answer the four previous questions, this study assumes the following:

- Algerian Secondary school teachers would use the Mind Mapping strategy in teaching reading.

- Algerian Secondary school teachers would follow the rules of Mind Mapping when they use it in the classroom.

- Mind Mapping would play an important role in teaching reading in the Algerian secondary school classroom.

- Secondary school teachers would hold a positive attitude towards the use of Mind Mapping as a reading strategy.

6. Structure of the Study

The study at hand is divided into three main chapters. The first two chapters constitute the theoretical framework of the study, whereas the third one constitutes its practical framework.

The first chapter highlights the Mind Mapping strategy. It starts by providing different theoretical definitions of the strategy, then presents its two types, pen and paper Mind Mapping and software Mind Mapping, and after that, exposes its basic rules, the main steps to be followed in its generation, and its different applications.

The second chapter sheds light on the reading skill and reading comprehension. First, it presents definitions, types, models, and some of the strategies of reading.

Second, it addresses reading comprehension, providing and illustrations, the levels, elements, and components of reading comprehension, and ends with a section on Mind Mapping as a reading comprehension strategy.

The third chapter, the study's empirical framework, begins with an introduction of the fieldwork. It then sets out to analyze and interpret the stat collected in the study. Some pedagogical recommendations are provided at the end of the chapter.

7. Research Methodology

As a topic, the use of Mind Mapping as a strategy to improve learners' reading comprehension can be approached in different ways, depending on the research method being used. Though the experimental design is considered the most robust in terms of variables measurement and validity, its adoption is by no means practical in the context of this study. Instead, the researchers had to adopt a descriptive design in which two research tools, namely the interview and the classroom observation, were used. The interview was administered to third year secondary school teachers at Khanchoul Ali and Kerdoud Mohammed secondary schools in El Milia, Jijel, in order to collect qualitative data about the teachers' attitudes to the use of Mind mapping. The classroom observation was also conducted in the above mentioned two secondary schools to observe the use of Mind Mapping as a reading strategy. These two tools, the researcher believe, help in answering the research questions and testing the assumptions.

Chapter One: Mind Mapping Strategy

Introduction

English, as an international language, has become widespread all over the world and used in many fields of life, especially the educational field. Learning English requires learning and practicing the four skills; writing, speaking, listening and reading. English language learners are supposed to master the four skills of English, using appropriate strategies. One of the suggested strategies that are supposed to be used by teachers in reading is mind mapping. Mind mapping is a strategy thought to increase one's ability in note taking; it does not only include the key words of information or ideas, but also implements the use of colors and drawings, making of it fun and enjoyable for reading. This chapter provides, first, an overview of the human brain. Then, it highlights mind mapping as a strategy, by providing its definitions, types, rules, steps, applications and advantages.

1.1. Introduction to the Human Brain

1.1. 1. Hemispheres

Human brain is a complex organ that controls human's feelings and thoughts. Human brain is divided into two hemispheres which are responsible for certain functions such as receiving, storing, analyzing, controlling and outputting. In this regard, Buzan (2006) stated that the "(…) left cortex deals with logic, words, lists, lines, numbers and analysis", whereas the "(…) right cortex deals with rhythm, imagination, colour, daydreaming, and spatial awareness '' (p.17).

Traditional note taking is made up of sentences, phrases, lists, lines, and numbers, which means relying only on the left hemisphere while neglecting the right one that deals with color and imagination (Buzan, 1986, p. 159). So, the brain works

by using both hemispheres, i.e., these hemispheres are activated when using senses, exaggeration, rhythm and movement, color, laughter, pictures and images, numbers, words, symbols, order, and patterns. The mind map uses all of these (Buzan, 2006, pp.143-144).
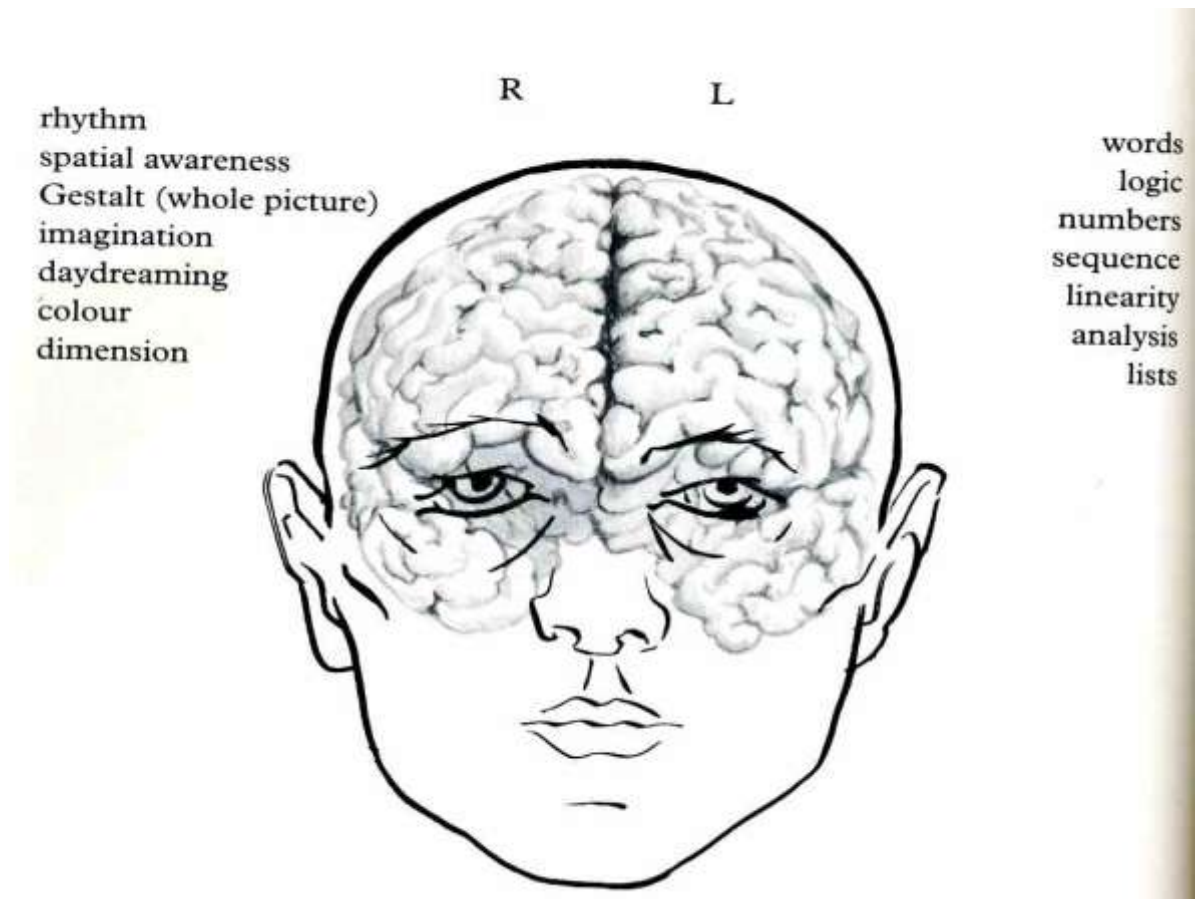
Figure 1: The brain's cerebral cortex (Buzan&Buzan, 1993, p. 32)

1.1.2. Radiant Thinking

Buzan (2006) pointed out that "the brain does not think in a linear, monotonous way. Rather it thinks and remembers information in multiple directions simultaneously, starting from central trigger points in key images and key words" (ibid, p.145). So this quote highlights the fact that the human brain works in a non-linear fashion, remembering information in dozens of directions starting from a central

idea or a key word. This can be grouped under the term *radiant thinking*. Radiant thinking (from *to radiate*, meaning to spread or move in directions, or from a given centre), refers to "(…) associate thought processes that proceed from or connect to a central point" (Buzan and Buzan, 1993, p. 57).

In the same context, Buzan and Buzan (1993) added that each bit of information that enters the brain can be represented as a central sphere from which radiate a large number of hooks and each hook represents an association, and each association has its own infinite array of links and connections.
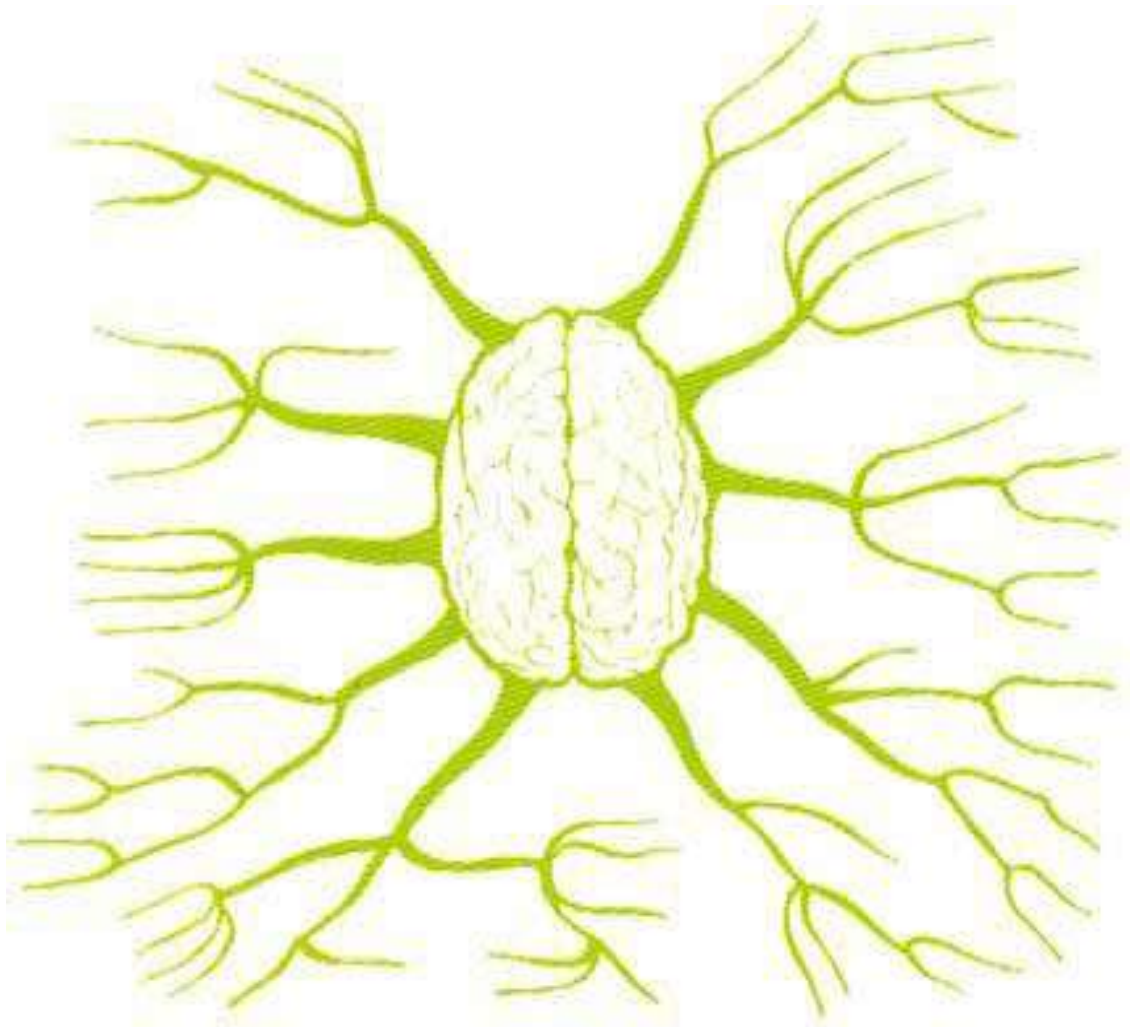
Figure 2: Radiant Thinking (Buzan, 2006, p. 154)

1.2. Mind Mapping as a Strategy

1.2.1. Mind Mapping Definition

The term mind mapping was defined in the work of Buzan (2006) as "(…) an associated network of images which incorporate all the main elements of memory theory and left and right brain information'' (p.132). That is to say, Mind Maps use colorful and well organized images that stimulate the left side of the brain to work together with the right side of the brain so as to provide the easiest way to put information into and out of the brain.

According to Buzan and Buzan (1993), Mind mapping is "(…) an expression of radiant thinking and is therefore a natural function of the human mind. It is a powerful graphic technique which provides a universal key to unlocking the potential of the brain'' (p.59). In other words, Mind Maps have a natural structure that radiates from the center which helps in the concentration and works as a succinct memory aid. Also, it is a highly organized diagram that works appropriately with the brain's natural way of doing things.

In the same vein, earlier in 2003, Buzan had already defined mind mapping as "a new way of studying and revising that is quick and works" .Also, he added "a Mind Map is the best way of coming up with new ideas and planning projects". (p.4). Additionally, Hillar (2012) agreed that "Mind Map is a great tool for summarizing information and group events that are related to each other'' (p. 6).

It is interesting to include the other simpler definition supplied by the Oxford Student's Dictionary (2012), in which mind mapping is referred to as "a diagram that shows all the words or ideas that are connected to a central word or idea. It is arranged with lines spreading out in different directions from a central point''.

As far as the terminology itself is concerned, it is worth noting that other labels are used interchangeably with mind mapping. Krasni (2011) labeled Mind Mapping as visual mapping and stated that it is known by many other names such as concept mapping, flow-charting, visual thinking, spider diagramming, memory mapping, semantic mapping, and thought webbing.

1.2.2. Types of Mind Mapping

Mind Mapping is not restricted to a particular means; a mind mapper can generate his or her Mind map with either a pen and paper or with suitable software. That is to say, there are two types of mind mapping strategy: Pen and paper, which is known as Traditional Mind Mapping, and software Mind Mapping, which is known as Computer Mind Mapping (Rustler, 2012).

1.2.2.1. Pen and Paper Mind Mapping

The Mind Mapper can create this kind of Mind mapping to visualize and keep his or her thoughts and ideas together. Creating pen and paper Mind maps involves two important tools: a piece of paper and several pens. Buzan (2006) identified some characteristics for the paper, namely:

- Papers should be large sized in order to be able to explore ideas.

- Papers should be blank and unlined to enable the mind to think in a non linear, uninhibited and creative way.

- Papers should have quantity of a good quality.

On the other hand, pens are another essential tool for developing a pen and paper Mind map:

- Pens should be easy-flowing to be able to read what has been created and writing fast.

- A selection of colored pens and highlighters is important because colors stimulate the brain and activate creativity and visual memory.

Pen and paper are often preferable when the user does not have the desire to use the computer or when the computer cannot provide the flexibility that can be gotten with pen and paper. In addition, this kind of Mind Mapping is particularly used in preparing for exams and making notes from books.
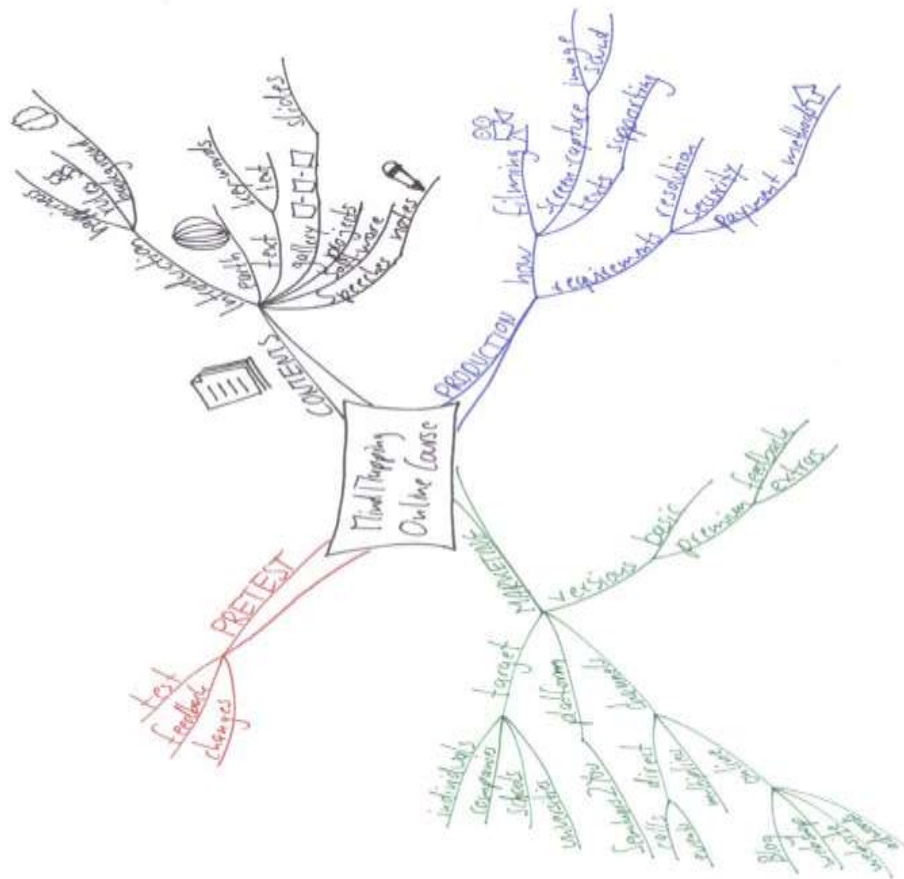
Figure 3: Pen and Paper Mind Mapping (Rustler, 2012, p.60)

1.2.2.2. Software Mind Mapping

Mind mapping is an essential tool for organizing and creating new ideas. Unlike pen and paper Mind Mapping that is easier to be lost, software Mind Mapping with its applications help the user to keep everything save and secure in backed up digital file (Guinness, 2017). Furthermore, the possibilities of Mind Map visualizations can be combined with the advantages of computing where the branches are drawn and arranged automatically. Also, using software programs like IMind Map and Mind Manager and so on enable the user to change colors and add graphics and symbols.

Rustler (2012) proposed five advantages for software Mind Mapping:

- Software Mind Maps can be flexibly altered and reworked at any time; the user can change the structure of the Mind Map when making a mistake, changing his or her mind or arranging some branches differently. Further, graphics and symbols can be changed at any time.

- Accessing the internet or other files with hyperlinks: Mind Mapping software allows the user to connect a branch with any website or data file via a hyperlink, then a range of digital information from mind mapping can be utilized by linking it quickly to the relevant documents.

- Filtering makes mind maps even more flexible. By means of this, some programs, like Mind Manager, allow the user to filter a mind map according to specific criteria such as colors and symbols so that mind mapping can be reduced into few branches.

- Text memos add further information to each branch; Mind Mapping software has a text-memo that is used to enter additional text memos on a branch via an input window.

- Mind Maps can be exported to other formats; software mind mapping enables the user to transfer a mind map into other file formats as a pdf or image file.

To sum up, tackling a Mind Map either with a pen and paper or a software

program has its specific uses depending on the requirements' situation; also, the most

important thing in a Mind map itself is to understand what it is about.
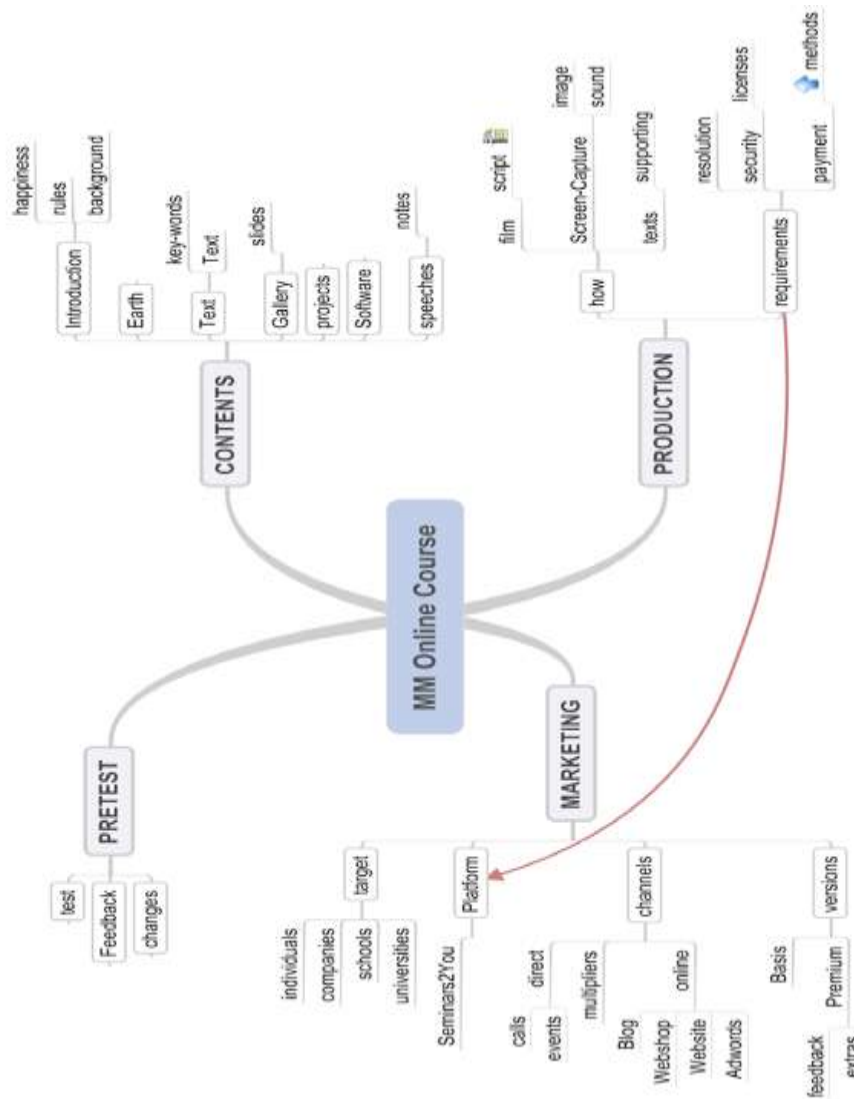
Figure 4: Software mind mapping generated with Mind-Manager (Rustler, 2012, p.173)

1.2.3. Rules of Mind Mapping

A Mind Map is a visual thinking tool invented by Tony Buzan. It is used to clarify complex thoughts and concepts exist in the mind into simple ones using images, colors, symbols, arrows and short phrases. Buzan(nd, pp.147,148) stated several rules to consider when creating a mind map:

- A colored image in the center;

- Main ideas branch of the center;

- Main ideas should be in larger letters than secondary ideas;

- Words always one word per line. Each word has an enormous number of associations, and this rule allows each one more freedom to link to other - associations in the brain;

- Words should always be printed (either in upper or lower, or in a combination of upper and lower cases);

- Words should always be printed on the lines (this gives the brain a clearer image to remember);

- Lines should be connected. The connected lines should be the same length as the word for efficiency of both association and space;

- Use as many images as possible (this helps develop a hole brained approach, as well as making it much easier for the memory; a picture is in this context, worth a thousand words);

- Use dimension wherever possible (things that stand out are more easily remembered)

- Use numbers or codes or put things in order, or to show connections.

For coding and connecting, use arrows, symbols, numbers, letters, images, colors, dimensions, and outlining.

1.2.4. Steps to Creating a Mind Map

Mind mapping offers an overview of the topic which allows students to comprehend, create new ideas and build connections. Buzan (2005) stated that creating a mind map includes considering the map's central image branches, colors, branches, key words and images through following different steps: first, the mind mapper should start from the center of a blank unlined page and turn it sideways because starting in the center enables the brain to spread out ideas freely in all directions. Also, starting in the center reflects the nature of the brain thinking process. Second, an ''image'' or a ''picture'' will be placed for the central idea since images increase concentration and strength memory retention. In addition to that, using images wherever possible in the Mind Map would add more focus and make it more attractive. Third, throughout the Mind Map, different colors should be used, in the sense that colors stimulate memory and creativity and wake up the brain. Also, colors add life to images and make the mind map more fun and enjoyable. Fourth, the Mind Mapper would connect the main branches to the central image and connect the second and third level branches to the first and second level, for the cause that human brain works by association. Fifth, curved lines should be used rather than straight ones to link and make connections throughout the mind map. The sixth step is that the Mind mapper uses one key word per line so as more power and flexibility will be added to the Mind Map. The last step states that images should be used wherever possible in the Mind Map: "image is worth a thousand words'', in the sense that images stimulate the left and the right hemisphere as well as improve the visual perception.

It can be concluded that, following all the aforementioned seven steps results an attractive and effective Mind Mapping that represents different ideas and thoughts through the use of different colors and images, and key words.

1.2.5. Applications of Mind Mapping

Oxford (2013) defines application as "a way in which something can be used for a particular purpose'' (p.65).

Buzan and Buzan (1993) stated "The mind map can be applied to every aspect of life where improved learning and clearer thinking will enhance human performance'' (p, 39). In other words, mind mapping is a technique with applications in many different areas. Rustler (2012) pointed out that mind mapping involves a couple of easily assimilated ground rules. With this set of rules, mind mapping can be applied to many situations wherever information has to be structured and organized to get better results, improve memory and spend less time actually making notes. The frequent applications of mind mapping are mentioned below.

1.2.5.1 Cribs for Lectures and Presentations

One of the most powerful ways to use mind maps is as lecture notes. Preparing a lecture in a mind map form is much faster than writing it out. Also, making presentations at school, college or university can inspire fear for students. Fortunately, mind mapping helps overcoming this fear by enabling the mind mapper to prepare, organize and present his or her information and ideas in a clear, interesting and effective way. In addition, with mind map, presenting is a breeze for students where they have only to use necessary key words and images to stimulate memory. So, they can automatically present in a more conversational way as they keep eye contact with their audience.

Furthermore, the important content of a lecture or a planned presentation can be visualized in a mind map that is ready and clear for the lecturer to access at all times; as well, it enables the speaker to hold a perfect balance between a spontaneously spoken and effective talk on the one hand, and a clear and a well structured presentation on the other hand. Moreover, with mind mapping, lecture notes can be prepared so that the lecturer can speak freely and naturally since the main points of a lecture or talk can be organized on a single page or just a few pages.

Rustler (2012) suggested four important steps for preparing lecture notes with the Mind mapping strategy as follow:

➢ Marshalling the initial thoughts involves gathering together the initial ideas and thoughts on the topic and visualize them with a mind map.

➢ Determining the main themes: this means turning these knowledge and ideas the target audience. Thus, here the lecturer thinks about the possible main branches of the new mind map.

➢ Adding details: this involves adding as many details to the main branches as the lecturer likes. These details can be in the form of sub-branches of graphic information like symbols and color coding as they are assimilated particularly and readily than words.

➢ Testing the Mind map. By means of this, checking whether the mind map has enough detail or there is a need to add further details in the form of sub-branches. Also, this step involves determining whether the structure of the mind map meets the requirements of the lecturer. Further, before delivering the lecture, the lecturer should try it out on himself at least once so that he feels even more confident when he actually delivers it.

To sum up, with the mind mapping strategy, the lecturer keeps only the most interesting facts and information and lays it out in a clear structure. Also, the lecturer can present using amazing inbuilt presentation mode that animates the mind map as talking. Accordingly, it makes the lecture more funny and interesting for both the lecturer and the students or audience.

1.2.5.2. Taking notes from Texts and Books

When students read texts or books they encounter problems to remember all what have been read or get it all down. Thus, Mind Map that is considered as a great way for students to summarize the essential content of many texts and book pages in one or more mind maps, helps students to note down only the most important information using key words and then make visual connections between facts and ideas. This makes students easily and quickly remember the information.

Every mind map is unique and personal. In the case of notes from books, mind maps are designed mainly for the person who made the mind map and are not usually comprehensible to other people. By mind maps, the whole book can be summarized on just one or a few pages and recall the content at a glance through following two important steps:

1. Skim-read the text: this means to read through the text once to get a basic impression of the structure and organization of the text.

2. Read the text in detail and generate a mind map at the same time: here the reader marks the important points and enter it in a mind map until the end of the text would be reached, and the mind map will also be completed (Rustler, 2012).

In short, students sometimes get annoyed when they immediately forget what has been read in a text book. By following the mind map approach, the reader can turn the whole text or book into mind maps. Thereby, the important information is available at all time and easy to find.

1.2.5.3. Taking Notes from Presentations and Discussions

Many people frequently encounter situations in which they listen to others and want or need to note something down; an example of these situations is presentations and discussions. Generally, in meetings, people talk in a disorganized way and jump from one topic to another. Also, negotiations can be tense of both relevant and irrelevant information where it is easy to get lost and confused with all overloaded information. Thus, mind mapping makes it easier for negotiators to understand how each small idea relates to the overall bigger picture by starting with the main idea in the center and branching it out with possible terms. In addition, mind mapping is the best note-taking technique because it does not follow a chronological order, which means that additions and extensions can be added flexibly to any branch at any time.

1.2.5.4. Project Management

Rustler (2012) considered project management as "all management tasks, organization, techniques an resources for initiating, defining, planning, controlling and concluding projects'' (169).

The Mind Mapping strategy provides a visual presentation of the project so that the team leaders and the members can discuss and explore the ideas further to analyze and solve the problem. It has been used by project managers for a long time and it is one of the tools in the project management planning that provides a visual way of expressing ideas and communicating these ideas to the rest of the team members. In

addition, mind mapping is a simple way of presenting the ideas during the project implementation phase. It is also used to indicate constraints that may affect the completion and quality of the project.

According to Collins, "Managers typically wish to know much and how long a project will take and yet they still want to have the flexibility to respond to the business environment and embrace innovation''(Collins, p. 530). That is to say, project managers keep having to update frequently changing content, and mind mapping is very helpful in the way it can be easily altered at any time. Also, it provides an easy and quick overview of the project in its entirety so that to get a better understanding of the connections between the different aspects of the project and the approximate time that will be spent to carry it out.

Furthermore, the Mind Mapping software is particularly helpful with project management in that a mind map can be converted to other file format. Moreover, it enables to use additional functions of the program that are relevant to project management, such as the inclusion of time scheduling and personal details (Rustler, 2012).

1.2.5.5. Knowledge Management

Bergero (2003) pointed out that "Knowledge management is the ability to selectively capture, archive, and access the best practices of work-related knowledge and decision making from employees and managers for both individual and group behaviors''(p.06). Rustler (2012) simply defined knowledge management as "tasks and activities intended to manipulate information in the best possible way'' (p.181).

Mind mapping, as a strategy, is especially useful for managing personal knowledge and it does not matter if it is intelligible to other people. In addition, having a clear overview of areas of knowledge and recovering the information needed is a

central element of knowledge management. Designing mind maps for knowledge management provides the greatest flexibility to link several areas of knowledge together especially in preparing scientific papers in that mind Mapping can be used profitably, in situations where the researcher needs access to a large number of specialist articles and other sources. So, Mind Mapping can be used profitably to link these sources and information. (Rustler, 2012)

1.2.5.6. Exam Preparation

Many students hate studying for exams because of the huge number of notes they are required to memorize, forgetting what has been revised and feeling the need for effective methods for exam preparation. Mind maps make preparing for exams much easier, as it is used to check what has been memorized through the remembrance of only the key words. In this way, students would find that they have memorized more and maintained connections between ideas. In addition, using mind maps enable the students to capture all the information on one page, enabling them to see the interconnections of ideas. What is more, mind maps encourage students to utilize the power of images and colors to add emphasis and association to students' notes.

Buzan (1971) states that "Students would fail to excel at examination time, invariably complaining that they had not had time in the examination room to gather together the knowledge they had'' (p. 154). Hence, problems such as theirs can be overcome by preparing for examinations using appropriate techniques such as mind mapping, and applying this strategy includes using pictures to link the main information in a comprehensible way so that the students can easily remember it on the day of examination. Besides being able to remember information perfectly for examination by using the mind mapping strategy, students will also be cultivating the creative powers of their mind that lead to their complete success.

1.2.6. Advantages of Mind Mapping

As it has been mentioned before, Mind mapping enables managers to visualize their projects and knowledge, allows lecturers to organize their lectures and presentations, and helps students in note-taking and exam preparation. As Buzan (nd) asserted, "The mind map can be applied to every aspect of reading, studying and learning, and will enhance all levels of performance'' (p.149).

Another aspect of mind mapping is that it allows organizing and understanding information faster and better, and enables the users to easily sort through different details and recognize relationships among these details.

Buzan (2003) argued that mind maps enable the user to remember better, come up with brilliant ideas, save time, get better grades, organize thinking and hobbies, and have more fun.

Additionally, Hillar (2012) mentioned that educators consider mind mapping a good approach for upholding students with well-arranged ideas; mind mapping was considered as a great asset for teaching in which teachers only present the basic content and the students organize the thought processes when writing.

Conclusion

This chapter has attempted to cover the various aspects related to the mind mapping strategy, with a particular emphasis on the application of this strategy. This chapter has exposed the concept of mind mapping by drawing upon the definitions of researchers in the field and made a clear distinction between its two types: pen and paper mind mapping and software mind mapping. It has also highlighted a set of mind mapping rules and the steps of making an effective mind map. The several applications of the mind mapping strategy have also been enumerated. The issues dealt

with are believed to constitute the initial step to the approaching of mind mapping use in the classroom context.

Chapter Two: Reading Comprehension

Introduction

Reading plays an important role in mastering any foreign language. It is a familiar part of our everyday life that has been investigated for decades. It is defined as an interaction between the reader and the text and a process to understand a written text. Scholars and researchers in the field have been trying to understand the details of the process. Thus, this chapter is devoted, first to highlighting some issues related to reading, and second reviewing issues related to reading comprehension. The first section gives an overall description of the reading, presenting different definitions of reading, reading types, reading models, and some reading strategies deployed to ensure reading comprehension. The second section is going to be the core of the chapter. It consists of some definitions of reading comprehension, the reading comprehension levels, and the five reading comprehension elements involved in any reading comprehension.

2.1. Reading

2.1.1. Reading Defined

Reading is an everyday familiar part for most of us. For many years, it has gained a great attention by many researchers and experts, who defined it in several ways. Silberstein (1994) defined reading as "a complex information processing skill in which the reader interacts with text in order to (re)create meaningful discourse'' (p. 12). That is to say, reading is uniquely human; it requires interaction between the reader and the text in which the former coordinates a number of skills and strategies to interpret the meaning of the written passage.

Following the same attempts to clarify the concept of reading, Anderson (2003) described reading as "a fluent process of readers combining information from a text and their own background knowledge to build meaning'' (p.68). Similarly, O'Malley and Pierce (1996) pointed out that "readers construct new knowledge from the interaction between texts and their background knowledge'' (p. 94). This means that the reader's background is integrated with the text to predict and extract the meaning.

Another definition was provided by Vaca et al (2003) who argued that "reading is not a passive activity; it is an active thinking process that takes place 'behind the eyes'' (p. 22). Besides, Adler and Doren (1972) added "completely passive reading is impossible; we can not read with our eyes immobilized and our minds asleep'' (p. 5). In other words, reading is not a passive skill as it was claimed; rather, it is an active skill that requires the use of certain mental processes and several reading strategies for the purpose of constructing and decoding meaning.

2.1.2. Types of Reading

Different researchers showed different opinions about the types of reading. The types vary according to the reader's purposes, the nature of the text, and the pace of reading. Reading can be silent or aloud, depending on the reader's intention during the process of reading. Generally, a reader chooses to read silently to concentrate more on the main idea of the text, while another reader may prefer aloud reading to test his or her pronunciation and reading speed. However, extensive and intensive readings are the most common reading types distinguished in the literature.

2.1.2.1. Extensive reading

Extensive reading, known as reading for pleasure, usually occurs outside the class. According to Grellet (1981), extensive reading means "reading longer texts, usually from one's own pleasure. This is a fluency activity, mainly involving global understanding'' (p. 4). The same idea was asserted by Brown (2000) who stated that "extensive reading is carried out to achieve a general understanding of a usually somewhat longer text'' (p. 313). That is to say, in this type of reading, the reader is mainly concentrated on the general content meaning of the given passage rather than on the different language items such as vocabulary, grammar, pronunciation, etc.

In the same vein, Anderson (2003) defined extensive reading as the process of ''reading many books (or longer segments of text) without a focus on classroom exercises that test comprehension skills" (p. 72). This means that extensive reading is not followed by any kind of activities or exercises for the purpose of assessing and testing readers' comprehension.

2.1.2.2. Intensive Reading

Unlike extensive reading, intensive reading, also known as narrow reading, is usually performed inside classroom and requires a deep concentration of the reader. Brown (2000) explained that ''intensive reading calls students' attention to grammatical forms, discourse markers, and other surface structure details for the purpose of understanding literal meaning, implications, rhetorical relationships and the like'' (p. 312). In other words, the reader is required to pay attention to and focus more on the linguistic or semantic details in terms of grammar, vocabulary and pronunciation, an activity in which the reader may use a dictionary to check the meaning of a word or its pronunciation.

Furthermore, Anderson (2003) pointed out that intensive reading involves a short reading passage followed by textbook activities to develop comprehension or particular reading skills (p, 71). In the same context, Grellet (1981) viewed intensive reading as ''reading shorter texts, to extract specific information. This is more an accuracy activity involving reading for detail'' (p. 4). This means that the reader is supposed to read carefully in order to get a better comprehension of the written passage, and being able to solve the given activities provided in the textbook or elsewhere.

2.1.3. Models of Reading

Generally speaking, language information flows from the writer to the reader in the sense that the writer has a message to send and transmit to the reader through print, who then will interpret its meaning. With regard to the reading process, ''reading models often depict the act of reading as communication event between a sender (the writer) and a receiver of information (the reader)'' (Vacca et al, 2003). Reading models have emerged for the sake of finding out how readers process information when they read the written text, i.e. how readers construct meaning from the print is the key issue in the building of models of the reading process. This issue has led to the development of three classes of models: Bottom-up, top-down, and interactive.

2.1.3.1. The Bottom-up Model

Within this model, Vacca et al (2003) explained that the process of reading is initiated by decoding graphic symbols into sounds, believing readers first process and understand sounds in speech and move on to understand letters, then words, then finally moving to the meaning of longer sentences, paragraphs and texts. Hence, the

reader's role is defined in processing these units accurately to build meaning from the smaller to the larger units, i.e. from the bottom to the up.

Additionally, the bottom-up model of reading is also termed text-based or data-driven because the process is evoked by the incoming data. Students rely on this model when returning to poems to read and reread, calling attention to specific sections of the text (Silberstein, 1994).

Furthermore, Carrell (1988) and Swaffar (1991) suggested that a bottom-up model focuses on linguistic clues, builds literal comprehension of a text (as cited in Skudiené, 2016).This means that the readers do not activate their cognitive processes; they only derive meaning from part to whole, which makes it suitable for elementary levels of language instruction.

Moreover, Anderson (2003) added that, within a bottom-up approach to reading, most textbooks used to teach first and second language reading using an intensive reading approach. The latter is the most typical classroom focus; it includes a short reading passage followed by textbook activities to develop comprehension or a particular reading skill.

In short, the bottom-up model of reading uses phonics as its core, believing students first identify features of letters then combine these letters to read and write words; they then become familiar with spelling patterns and learn to read sentences and paragraphs, until all what is written turns to be meaningful. However, this model has been criticized because of its over-reliance on the structure of every single component of the text. Accordingly, another model is proposed.

Comprehension
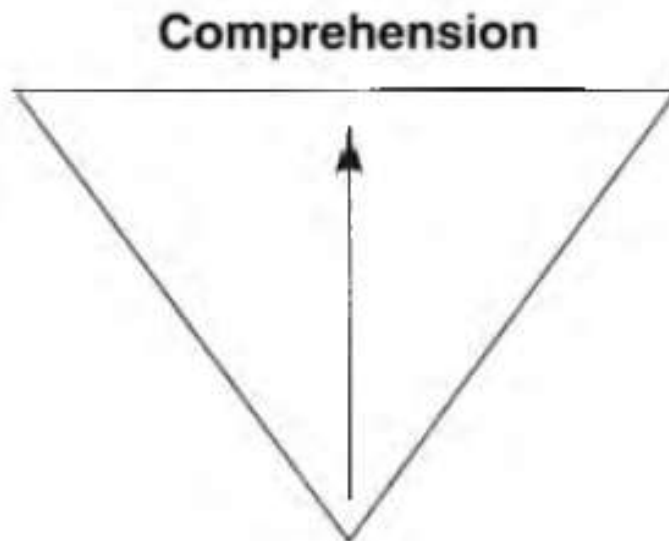
Figure 5: Bottom-up approach to reading (Anderson, 2003, p. 70)

2.1.3.2. The Top-Down Model

The top-down model is completely challenging the bottom-up model. It was described as knowledge-based or concept-driven. That is to say, ideas or concepts in the mind of a reader trigger information processing during reading. Within the top-down model, the readers use their prior knowledge to process information and make predictions about the content of the text. Shapiro (2004) defined prior knowledge or background knowledge as "all of the accessible pre-existing information the readers has stored in their long-term memory'' (as cited in Kroner, 2012). Also within this model, extensive reading or sustained silent reading (SSR) is emphasized, in which students read long sections like books or novels for global comprehension (Silberstein, 1994).

According to Manzo and Manzo (1995), ''reading is taught by providing meaningful text and emphasizing the relationship between the child's prior experience and information on the printed page'' (p. 16). In other words, the top-down model's focus has shifted from emphasizing sub-skills and literal understanding to focus on

what the reader brings to the process of reading in terms of the background knowledge a student may activate in order to infer the meaning of the text as a whole.

The top-down model stresses the reader's interaction with the text, as he or she is considered as a creator of the meaning via using his or her previous knowledge and expectation, rather than just seeking to extract meaning from every element of the text. Emphasizing this view, Redondo (1997) considered the reading process to be interactive where the reader checks his or her hypothesis and predictions, stated at the beginning, through simplifying textual information and interacting with previous sequences, i.e. the reader uses his or her previous knowledge to guess the meaning of the text, then with the reading process, he or she confirms or rejects the hypothesis.

Following this line of thought, Liu (2010) asserted that ''a top-down reading model is a reading approach that emphasizes what the reader brings to the text; it contends that reading is driven by meaning and proceeds from whole to part" (p. 154). In other words, the experiences a reader has help him or her to read, decode, and make sense of text or build knowledge about the text from whole (text) to the part (words).

**Reading begins with
reader background knowledge**
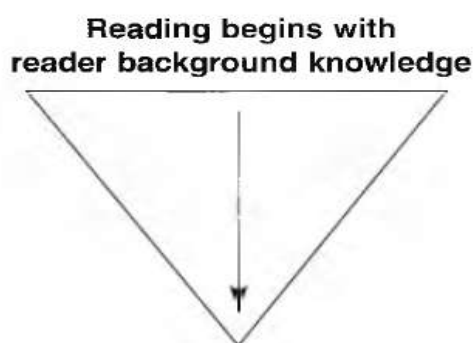
Figure 6: Top-down approach to reading (Anderson, 2003, p.71)

2.1.3.3. The Interactive Model

After the examination of the above two models of reading by theorists, it was concluded that both the bottom-up and the top-down model do not sufficiently explain the reading process. Stanovich (1980) stated that the latest research indicates that both bottom-up and top-down decoding strategies may be used in learning to read, and that efficient reading may require the integration of both models (as cited in Nunan, 1989). Thus, a new model of reading was developed known as 'the interactive model'. The main concept introduced under this model is that information is derived from the combination of the bottom-up and top-down models.

Stanovich (1986) argued that this method is interactive because "a pattern is synthesized based on information provided simultaneously from several knowledge sources" (as cited in Walker, 1989, p. 2). This means that readers elaborate their previous knowledge such as features and meaning of words, sentence organization to understand what they read. In addition, Goodman stated that the interactive process of reading operates on several levels: "the interaction of language and thought, the interaction of three sources of linguistic information (phonological, syntactic and semantic), and the interaction of reading and social context'' (as cited in Walters, 1988, p. 662).

In this regard, Lesgold and Perfetti (1981) stated that the interactive model combines the data-driven processing with conceptually driven processing to cooperatively determine the most likely interpretation of the input. That is to say, the readers combine what they know about the topic together with the information included in the text to construct meaning. In addition, within this model ''reading is an

interactive process between what a reader already knows about a given topic or subject and what the writer writes'' (Nunan, 1989, p. 33).

Vacca et al (2003) claimed that ''the process of reading is initiated by formulating hypotheses about meaning and by decoding letters and words'' (p. 28). By means of this, the process of reading is initiated by making predictions about meaning that are based on previous knowledge and by decoding letters and words involved in the text. Furthermore, "the interactive approach to reading would include aspects of both intensive and extensive reading.We need to provide learners with shorter passages to teach specific skills and strategies explicitly" (Anderson, 2003, p. 72).

To sum up, the interactive view can be summarized through four aspects. ''First, readers use both what they know and information from the text to construct meaning. Second, readers elaborate what and how they read. Third, readers continually monitor their understanding to see if it makes sense. Fourth, readers use the situational context to focus their purposes and frame their attitude toward the literacy event"(Walker, 1989, p.1).
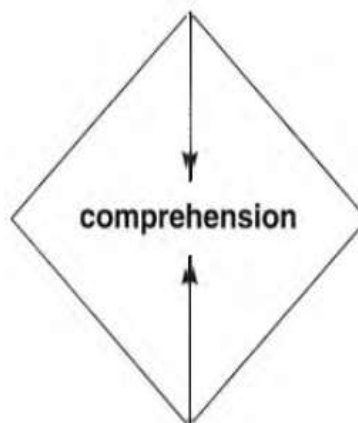
Figure 7: Interactive Approach to Reading (Anderson, 2003, p.72)

2.1.4. Reading Strategies

Reading is the process of eliciting information from the written passage. EFL teachers and learners are required to adopt and use appropriate reading strategies (RS) that enable them to achieve successful reading. RS was defined by Anderson (2003) as ''the ability of the reader to use a wide variety of reading strategies to accomplish a purpose for the reading'' (p. 68). For the sake of comprehending the written passages, several strategies were proposed by researchers and experts in the field such as; skimming, scanning, and inferencing.

2.1.4.1. Skimming

Skimming is one of the most employed strategies readers rely on while reading. Blanchard and Root (2005) stated that skimming "is a way to read quickly in order to discover the general idea of the text" (p. 73). In this regard, Brown (2000) indicated that "skimming consists of quickly running one's eyes across a whole text for its gist" (p. 308). That is to say, the reader is not required to read the whole text; rather, he or she moves his or her eyes rapidly all over the text and may skip some sentences or phrases and focuses only on other ones to get a general understanding of the given passage.

Besides, Grellet (1981) explained the act of skimming, regarding it as an act in which the reader goes through the reading materials quickly in order to get the gist of it, to know how it is organized, or to get an idea of the tone or the intention of the writer. To make reading effective through skimming, Mikulecky and Jeffries (2005) suggested the four following guidelines:

- Reading the first sentence or two at the usual speed, asking ''what is this about''.

- As soon as guessing the general idea, going to the next paragraph, remembering no need to know the details, the only need is to learn something very general about the passage;

- Reading only a few words in each paragraph, then looking for the words that tell the general idea (often those sentences are at the beginning of the paragraph or may also be at the end); and

- Working quickly and remembering that details are not important.

2.1.4.2. Scanning

Scanning is another quick reading strategy that the reader uses while looking for specific information or detail. Maxwell (1970) stated that "scanning is the ability to locate specific facts and details quickly'' (as cited in Asmawati, 2015, p. 71). Similarly, Blanchard and Root (2005) viewed scanning as another way to read quickly, in which the reader moves his or her eyes quickly across the text to locate a name, a date, a time or a key word. That is to say, scanning is useful when the reader needs to find a specific piece of information in the given passage.

Furthermore, Harmer (2007) pointed out that readers are in need to use such strategy in which they can scan the text for particular bits of information they are searching for, such as looking for a telephone number, or searching quickly through an article, looking for a name or other details. In the same context, Brown (2000) maintained that the purpose of scanning is to extract specific information without reading through the whole text. It is, then, the reader who picks out only the relevant information to his or her purpose of reading.

2.1.4.3. Inferencing

Mikulecky and Jeffries (2005) stated that inferencing, sometimes called 'reading between lines', is an act in which the reader "(…) uses the information in the text to guess other things about the text" (p. 53). In the same vein, Blanchard and Root (2005) asserted that "inference is an educated guess based on information in the reading" (p. 150). That is, the reader is required to combine the clues in the passage with information he or she already knows from his or her own life. In other words, the writer does not always mention every detail related to the topic; rather, the reader is supposed to use his or her experiences and information provided in the text to understand the intended meaning.

Further, Grellet (1981) agreed that inferencing consists of the use of "syntactic, logical and cultural clues to discover the meaning of unknown elements" (p. 14). That is to say, the readers are required to use their logical thinking and their cultural elements to interpret the meaning of unknown words or structures. Recently, Mikulecky and Jeffries (2007) have explained more the notion of inferencing by stating that readers "(…) use their imagination and their knowledge about the world to fill in facts and ideas that are not stated in the text" (p. 88). This means that the writers may not include all the possible information about a topic or situation; they leave out information that they think readers will know or will be able to guess.

2.2. Reading Comprehension

2.2.1. Reading Comprehension Defined

The process in which the reader interacts with the text to understand its meaning and to integrate with what the reader already knows about the topic or the subject of the text at hand is what is known as reading comprehension. The latter has been

defined by different researchers and scholars in the field. Klingner et al (2007) identified reading comprehension as:

> Reading comprehension is a multicomponent, highly complex
>
> process that involves many interactions between readers, and what
>
> they bring to the text (previous knowledge, strategy use) as well as
>
> variables related to the text itself (interest in the text, understanding
>
> of texts types (p. 8).

That is to say, for readers to understand the meaning of a text, they need to use their experiences (prior knowledge) and abilities (strategies) and combine them together with what they pick up from the written passage. Also, to show the mutual relationship between prior knowledge and reading comprehension, Alderson (2000) remarked that "the readers' knowledge affects what they understand" (as cited in Kaya, 2015, p. 39).

Besides, Paris and Hamilton claimed that ''reading comprehension is only a subset of an ill-defined larger set of knowledge that reflects the communicative interaction among the intentions of the author, the content of the text /message, the abilities and purpose of the reader, and the context /situation of the interaction''(as cited in Zhang, 2018, p. 36). In the same vein, Kimberly (2014) described reading comprehension as "an interactive process" that "occurs largely within a socio-cultural context that shapes and is shaped by the reader's background knowledge and experience, purpose for reading, information available in the text, and the activity of context in which the reading occurs'' (para. 2).

Furthermore, Snow (2002) defined reading comprehension as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (p. 11). In other words, the reader extracts the

required information from the passage, and then tries to construct the intended meaning of the author via an active engagement of the reader's abilities and his or her purpose behind reading. Additionally, Oakhill et al (2015) suggested that ''reading comprehension is a complex task, which requires the orchestration of many cognitive skills and abilities'' (p. 1). So, in order to achieve comprehension, the reader has to use his or her cognitive processes such as analyzing, synthesizing, interpreting and critical thinking in addition to his or her abilities; appropriate strategies and background knowledge).

In brief, reading comprehension is a complex process in which the readers interact with the written passage, make connections between what they read and what they already know, and then construct meaning. This is maybe the reason why Grabe (2002) used ten adjectives to describe the process of reading comprehension as "a rapid, efficient, comprehending, interactive, strategic, flexible, purposeful, evaluative, learning and linguistic process which delineates what fluent readers do when processing text'' (as cited in Zhang, 2018, p. 36).

2.2.2. Reading Comprehension Levels

As it was mentioned in the above lines, reading comprehension is a complex process in which the reader goes beyond the text to extract the required information and construct the hidden meaning. In order to reach that comprehension, the reader usually goes through various comprehension levels. According to Brownlow (2010), comprehension level refers to "the thinking processes that are stimulated in order to arrive at answers to reading comprehension questions" (p. 3). Many researchers and experts have identified variant levels of reading comprehension. However, the most

common levels are literal comprehension, inferential comprehension and critical comprehension (Clymer, 1968, as cited in Brassell&Rasinski, 2008).

2.2.2.1. Literal Reading Comprehension

Literal reading comprehension is the first level, in which the reader retrieves information that has been explicitly stated in the written passage. It is said to be the lowest of the three levels since it does not require much concentration or deep analysis of the content of the text. Literal reading comprehension requires a reader to recall the facts or information in a text such as the names of the characters or details of the setting, i.e. the information needed for literal comprehension comes basically from the text itself (ibid). Additionally, Perfetti et al (2005) pointed out that this level of understanding is based on the students' word-level processing skills or their ability to accurately identify words and understand the meaning created by the combination of words into proposition and sentences (as cited in Basaraba et al, 2013). This means that the reader needs only to comprehend the explicit meaning of the words without making any inferencing.

2.2.2.2. Inferential Reading Comprehension

According to Clymer (1968) inferential comprehension is more sophisticated than literal comprehension because it requires the reader to use his or her previous knowledge and draw connections between pieces of information presented in the text in order to find out the intended meaning of the text or what the text is about, i.e. the reader goes beyond what is obvious to what is between lines (as cited in Prassel&Rasinski, 2008). Thus, the reader can infer new information or ideas.

Perfetti (1999) stated that inferential comprehension enables the students to understand the text written on the page, i.e. literal comprehension, and then students

interpret the meaning of text and the arguments or claims that are presented across the text, i.e. inferential understanding, which enables the students to apply their own background knowledge or prior experiences to the text to facilitate understanding (as cited in Basaraba et al, 2013).

In the same context, Dole et al (1991) described inferences as "the heart of comprehension process". Hence, for the crucial role of inferences, readers are required to make different types of it, such as text based inferences, which are also known as text connecting inferences and knowledge based or gap-filling inferences, to understand the text. The text based inferences are those that are required to establish coherence within a text (Perfetti, 1999; Perfetti et al, 2005; as cited in Basaraba et al, 2013). Meanwhile, knowledge based inferences are those that draw on a reader's knowledge to help represent and understand the relationships between persons or events described in the text (Kintsch&Rowson, 2005; Oakhill & Cain, 2007) (as cited in Basaraba et al, 2013).

2.2.2.3. Critical Reading Comprehension

The critical level, also known as the evaluative level, is the highest and the most complex level, in which the reader makes comparisons and judges the presented information in the text. This level of reading comprehension involves making in-depth analysis and critical thinking to judge and evaluate the facts, assumptions and ideas in the written passage (Prassel&Rasinski, 2008). This means that the reader makes critical judgments about the author's ideas on the basis of prior knowledge and experiences.

In the same context, Harber (1970) named this level of comprehension as the evaluative level in which the readers are required to juxtapose what they have read in

the given passage with their own prior knowledge and experience. At this level, the readers need to use a myriad of different skills such as divergent thinking, critical analysis, synthesis and evaluation (as cited in Basaraba et al, 2013). In other words, the critical reading comprehension level involves the examination and analysis of the presented facts and ideas by the interference of prior knowledge and reasoning thinking. Here the readers elevate and raise their critical thinking depending on a basic previous knowledge that enables them to accept or reject the author's message. Furthermore, McCormick (1992) and Rupley& Blair (1983) clarified the concept stating that ''evaluative comprehension can be seen as an extension of the knowledge, skills, and strategies required of literal and inferential comprehension tasks" (as cited in Basaraba et al, 2013). That is to say, the readers are required to understand the given passage (literal comprehension), then try to interpret the hidden meaning of the text (inferential comprehension), and then subsequently arrive at analyzing and evaluating the acquired information.

2.2.3. Reading Comprehension Elements

Reading comprehension is an interactive process that involves the reader with his or her abilities and experiences, the written passage, and the purpose behind doing the reading process. The reader may read for pleasure, giving a brief summary or for providing and finding out certain answers to the given questions. Thus, Snow (2002) stated that "reading comprehension consists of three elements: the reader, the text, and the activity or the purpose of reading" (p. xiii). So, the reader, the text, and the activity are the basic elements of reading comprehension.

2.2.3.1. The reader

The reader, an essential element in the reading comprehension process, performs the act of decoding, comprehending, interpreting, analyzing the given printed document and then solving the given task. Snow (2002) explained the crucial role of the reader stating that the reader brings to the act of reading his or her cognitive capabilities (critical analysis, inferencing, attention, etc.), motivation (interest), knowledge (vocabulary, linguistic, and discourse knowledge), and experiences. That is to say, the reader plays a crucial role in the reading comprehension process in which he or she can bring things to the text that are more than those found in it. This happens through the use of his or her critical analysis of the given information, interest in the text's content, knowledge of the vocabulary, and knowledge of the comprehension strategies and reader's experiences.

2.2.3.2. The Text

The text is another element that has a great impact on the reading comprehension process. During reading, the reader constructs different representations of the text. These representations include the surface code (the exact wording in the text), the text base (idea units representing the meaning), and the mental models (how to process the extracted information into meaning) (ibid). In other words, the reader interacts with the presented content of the text, its vocabulary, the linguistic structure, discourse style and the genre of it to build the required comprehension. The reader should be aware of those text features that are necessary for the reading comprehension process. For example, understanding the vocabulary of the given reading text leads automatically to the comprehension of the whole passage and then to solving the given task easily.

2.2.3.3. The Activity

The activity also influences the reading comprehension process. Usually, activity refers to the tasks or exercises that would be done after the reading process. Snow (2002) stated that "the reading activity involves one or more purposes or tasks, some operations to process the text, and the outcomes of performing the activity, all of which occur within some specific context" (p. xv). Then, he added that the initial purpose of the activity may change while the reader reads, in which he or she may encounter ideas or facts that elevate new questions. The following figure explained the tree elements of reading comprehension in which the reader brings his or her prior knowledge and experiences together with what is mentioned in the given passage (text) and tries to solve the given activity. All of each occurs in a specific context.
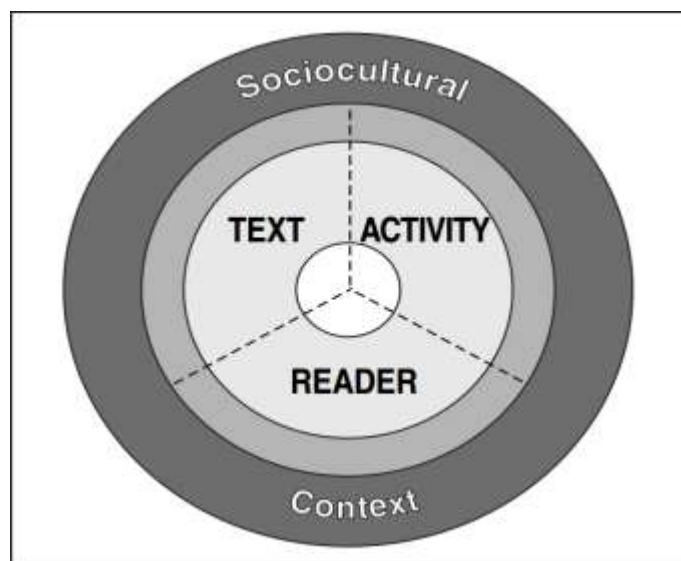
Figure 8: A Heuristic for Thinking about Reading Comprehension (Snow, 2002, p.12)

2.2.4. Components of Reading Comprehension

Cromley and Azevedo (2007) created a new model of reading comprehension, called the Direct and Inferential Mediation Model (DIME). This model shows the relationship among background knowledge, inferences, reading comprehension strategies, vocabulary, and word reading. The latter presents the components of the reading comprehension process.

2.2.4.1. Background knowledge

According to Vacca et al (2003), "Prior knowledge represents the experiences, conceptual understanding, attitudes, values, skills, and strategies that students put into play to comprehend what they are reading" (p. 289). In other words, background knowledge refers to the existing information that the reader already knows about a topic through direct world experiences, or parents and EFL learners' instructions. This helps the reader to make connections and predictions that facilitate comprehension i.e., the more readers know about a topic the easier it is to read and understand it.

Silberstein (2004) identified two kinds of background knowledge: formal schemata and content schemata. Formal schemata are related to the rhetorical structure of a written text, such as differences in genre or between narrative styles and their corresponding structures. Content schemata refer to knowledge about the subject matter or the content of text.

In short, as the DIME model concluded, having sufficient and accurate background knowledge has a direct effect on comprehension. That is, already having accurate knowledge about a topic enables a reader to better comprehend a text. However, the fundamental problem is that most college entrants have lack of prior

knowledge. Thus, the latter has to be built in a reading program that should contain developmental instruction about background knowledge.

2.2.4.2. Inference

Jumiaty (2014) described making inferences as making logical guess or reading between the lines. Also, Bailey (2000) stated that "inference is drawing conclusions based on information that has been applied rather than directly stated" (as cited in Jumiaty, 2014, p. 223). Thus, inference is a basic skill in reading comprehension where students imply their prior knowledge to create new meaning or draw a conclusion that is not explicitly stated in the reading passage. Phillips (2014) noted that ''inferring in text understanding is a constructive thinking process" (p. 2). This is because the reader proposes and evaluates hypotheses about the meaning of the text to gradually refine comprehension and expand knowledge. In line with this statement, Goetz (1977) claimed that ''inference makes it possible for a reader to comprehend the information which the author presented" (as cited in Phillips, 2014, p. 2). In addition, Hall and Barnes (2017) emphasized this idea saying that "making inferences during reading is a critical standards-based skill and is important for reading comprehension" (p. 279).

Hall and Barnes (2017) identified two types of inferences. The first type is called "text-connecting" inferences. In this kind, the reader makes inferences by establishing meaningful connections between various pieces of information literally stated in the text. It can be simple as connecting a pronoun with a previously mentioned pronoun or thing it refers to. The second type, called "knowledge-based" or "gap-filling" inferences, refers to inferences the reader makes by establishing meaningful connections between information literally stated in the text and the

reader's background knowledge. In addition, the knowledge-based inference may draw on what the reader knows about people's motivations to infer why a character performed a given action. As well, teachers can show students how to activate prior knowledge and integrate it with information in the text to generate inferences as they read, asking students about their previous experiences.

2.2.4.3. Strategies

McNamara (2007) suggested that the reading comprehension strategy refers to "a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension" (p. 6). In a similar view, Moreillon (2009) stated that ''reading comprehension strategies are tools that proficient readers use to solve the comprehension problems they encounter in texts" (p. 10). In other words, readers tend to use a set of strategies for the sake of understanding the given words, phrases, sentences, then arriving at comprehending the whole written passage. Therefore, readers should be aware of the reading strategies that are used in pre-reading, during reading and in post reading, then apply them in the required moment. For example, readers usually rely on different cognitive and metacognitive strategies.

2.2.4.4. Vocabulary

Generally speaking, a person's vocabulary refers to the total number of words that the person knows and how much he or she knows about them. It is clear that effective reading comprehension depends on good knowledge of the meanings of words. Indeed, for a long time, it has been known that vocabulary knowledge is strongly related to reading comprehension (Carroll, 1993; Davies, 1944/1968; Thorndike, 1973; as cited in Oakhill, Cain &Elbro, 2015, p. 54).

The ability to deal with unfamiliar words conveyed by the text is one of the basic aspects of comprehension. According to the DIME model, Cromley (2007) stated "Reading vocabulary affects comprehension". Hence, readers who do not have a rich vocabulary find it difficult to comprehend the text. Reading practitioners, on the other hand, have introduced various learning strategies and techniques for teaching vocabulary for EFL or ESL readers as a way to facilitate the acquisition of the English language. In this context, Schmitt (2014) pointed out that vocabulary learning strategies are classified into determination, social, memory, cognitive, and meta-cognitive strategies. The determination strategies include using dictionaries and guessing the meaning from context. Social strategies include asking others such as the teacher or classmates about the meaning of unknown words. Memory strategies help learners to acquire the new words by connecting learners' background knowledge to the new words, while cognitive strategies include repetition, taking notes, highlighting new words, making lists, using flashcards and keeping a vocabulary notebook. Finally, metacognitive strategies include monitoring, decision making and assessment of one's own progress; they may also aid learners to acquire new vocabulary through using the English language media, studying new words many times and so on (as cited in Ghaith, 2018). So, knowing the meaning of words is very crucial for reading comprehension in that a successful learning of vocabulary will lead to a deeper level of reading comprehension.

2.2.4.5. Word reading

Word reading, also known as word decoding, is ''the identification of single, written words, either by letter-sound associations or by recognition of the unique letter sequence" (Oakhill, Cain &Elbro, 2015, p. 10). Generally, in the early years, children's reading competence is typically limited by their ability to read words, and

they cannot comprehend everything included in the text, i.e. some children have problems with the development of both word reading and language comprehension. Thus, research studies found out that word decoding and language comprehension are important for reading throughout the school years in that word decoding determines the differences between good and poor readers in the early school years, while language comprehension is more important in accounting for differences in reading ability in the coming years (Gough, Hoover, & Peterson, 1996 as cited in Oakhill, Cain & Ebro, 2015). So, word reading and reading comprehension are absolutely necessary for reading (ibid, p. 9).

2.2.5. Mind Mapping as a Reading Comprehension Strategy

Since this chapter is concerned with reading and how comprehension is achieved, several strategies were proposed by scholars and researchers in the field. Mind mapping is one of those thought to be of crucial interest to ensure students reading comprehension. Brown (2000) emphasized the use of semantic mapping, with regard to which he stated that "(…) the strategy of semantic mapping, or grouping ideas into clusters, helps the reader to provide some order to the chaos" (p. 308). That is to say, the reader tends to use this strategy to organize and present different ideas in which he or she draws a semantic map by a long string of ideas or events in an order and hierarchy manner which facilitate comprehension. In the same context, Lems et al (2010) explained how mind mapping enables the reader to reach reading comprehension by saying that ''semantic mapping especially helps activate a student's prior knowledge for reading and for brainstorming before beginning to write'' (p. 179). In other words, this strategy is used also for the sake of activating the students' prior knowledge about the topic in which they may use their own words to present and visualize the content of the reading passage. In the same vein, Rizqiya (2013) claimed

that in order for the reader to comprehend important details, he or she may take notes. The latter would be better in the form of words to help the reader comprehend the information. This means that in mind mapping, students use their own simple words while taking notes to facilitate comprehension. Also, through Mind Mapping, the students are guided to develop their background knowledge of the text, recall the existing knowledge and relate it with the text (ibid).

Furthermore, McGriff (2000) stated that "Mind maps are an excellent way to help learners organize knowledge, to empower themselves to better comprehend the key concepts, principles in lectures, readings, or other instructional materials" (as cited in Ardakani & Lashkarian, 2015). This means that learners use Mind Mapping to better organize their ideas and thoughts, putting the main idea in the center surrounded by sub-ideas that reflect the natural way of how the human brain works. Moreover, Kaufman (2010) argued that "mind mapping is a useful technique to use while reading, since the non-linear format allows you to view the entirety of your notes at a glance, then easily place new information in the appropriate branch or make connections between ideas" (as cited in Rizqiya, 2013, p. 37). That is to say, the readers are able to add new ideas to the map at any time and make connections between the branches. This is in line with the top-down process, where the readers draw their experiences and intelligence to understand the text. Here are the merits of mind mapping: "Mind mapping combines two process of reading comprehension: top-down and bottom-up processes'' (Rizqiya, 2013, p. 38).

Conclusion

This chapter was on reading and reading comprehension. Reading is an important skill that has a great impact on the learning process. It invites the reader's background knowledge and experiences and combines them with the presented information in the written passage to reach comprehension. Additionally, readers tend to use a stack of strategies to cope with the problems encountered in reading. The review of the literature has shown that there are different kinds of reading, that reading can be performed at different levels, that at least three elements need to be present for it to take place and that it has also some components and strategies. Of these strategies mind mapping was addressed as it is the strategy to be investigated in this study.

Chapter three: Empirical study

Introduction

This chapter represents the empirical framework of the present study. It aims at investigating the use of the Mind Mapping strategy in Algerian secondary schools and whether it helps improve learners' reading comprehension. To reach these aims, two research tools were used: the semi-structured interview and the classroom observation. The chapter begins by presenting, analyzing and interpreting the findings of the interview, and then exposes the analysis and interpretation of the findings of the classroom observation.

3.1. Teacher Interview

An interview is a qualitative data gathering technique. Interviews are generally used in survey designs and in descriptive studies in which the interviewees are allowed to freely answer the researcher's questions in order to explore the interviewees' perspectives and attitudes toward a particular idea, program or situation. The interview was chosen as a research tool in this study as it is an easy way to exchange information between the teachers and the researchers; also, it allows face-to-face conversation, where the researchers can detect the reaction of the teachers through their gestures and facial expressions. The semi-structure interview was chosen to provide more reliable data in which teachers have the freedom to express their views in their own terms. Also, the researchers are not restricted to follow only the pre-prepared questions. Rather, they can pose extra questions depending on the direction of teachers' answers. The reason behind selecting the interview and not the questionnaire is that the former is more flexible because the researchers can adapt to the situation and get as much information as possible; whereas, in a questionnaire the responses are limited. In addition, within the interview, the researchers are present

with the teachers so as to clarify the meaning of questions if they are not understood by the teachers. Unlike questionnaires, the teachers in interviews may read differently into each question and therefore answering the questions relying on their own interpretation.

3.1.1. Population and Sample

The population of the interview is third year teachers of English at Khanchoul Ali and Kerdoud Mohammed secondary schools in El Milia, Jijel. The sample consists of four teachers. The interview was conducted with two male teachers from Khanchoul Ali high school and one male and one female teacher from Kerdoud Mohammed secondary school. For convenience of use in this research, the four teachers will henceforth be labeled teacher A, teacher B, teacher C, and teacher D.

3.1.2. Aims of the Teacher Interview

The aim behind administering an interview in this research is to support the classroom observation data and integrate teachers as a sample to provide more precise information to cover the subject. In addition, it exposes the teachers' views about reading and problems encountered by their learners while reading texts. The interview also seeks to find out whether teachers are aware of the different reading comprehension strategies. Moreover, the interview tends to elicit teachers' views about the Mind Mapping strategy and their suggestions as to how to improve the learners' reading comprehension.

3.1.3. Description of the Teacher Interview

This semi-structured interview was administered in the third trimester of the academic year 2018/2019 at two secondary schools in El Milia. The interview was

done in the staffroom, where each teacher was asked separately. This was done on purpose so that none of the answers of a teacher would influence other teachers' answers. The interview consisted of nine questions and lasted from 15 to 20 minutes, depending on the teachers' answers. Additionally, the interviews were recorded and the interviewees were aware of it except teacher A who refused to be recorded.

As regards the nature of questions, some of them were close-ended and others were open-ended questions to allow the teachers to give their opinions and perspectives that might differ from each other. The interview questions were organized from the most general to the most specific. First, they investigated the teachers' experience in teaching English at the secondary school, with particular reference to the main skill they usually focus on while teaching English. The next question was about the steps the teachers often take in teaching reading and the major difficulties encountered by learners in reading texts, in addition to the strategies teachers usually use in teaching reading. The last questions were about the Mind Mapping strategy and teachers' views about this strategy in improving reading comprehension.

3.1.4. Analysis of the Teacher Interview

Q1:How many years have you been teaching English at the secondary school?

Question one, in which the interviewees were asked about the number of years they served as teachers of English at the secondary school, aims mainly to identify whether the teachers' experience influences the learners' reading comprehension; in other words, to check whether experienced teachers actually know more about strategies and use them more effectively than novice teachers to ensure their learners' reading comprehension. Their replies were as follows: teacher C and teacher D said that they had a long experience in teaching English at the secondary school, with such

experience ranging from ten to twelve years. Teacher A said that she had an eight-year experience in teaching English at the secondary school, while teacher B said that he had a four-year teaching experience.

Q2: What is the main skill you usually focus on when teaching English? What about reading?

The aim behind this question is to know which skill the interviewed teachers consider as the most important, and their views about the reading skill.

Teachers B and D declared that reading and writing are the main skills they usually focus on; they justified their answers by saying that these two skills are the only ones that learners would be tested for in their formal exams, so learners should be well prepared in these two skills. Teacher A said that she usually focuses on reading as it enhances the learners' vocabulary and helps them in the writing skill, i.e., when learners understand the text together with its vocabulary, later on they find it easy to do well in written production. Teacher C answered this question by saying "I mainly focus on the four skills, but I think listening and reading are the most beneficial ones for the learners". Then he justified his answer claiming that listening can develop the pronunciation of the learners and that reading can enrich can their vocabulary.

Q3:What are the steps you often take in teaching reading?

This question was asked to know whether the teachers follow the same steps in teaching reading. According to the interviewees' answers, it was noticed that the four teachers followed the same steps starting with pre-reading stage, in which the teacher introduces his/her lesson using pictures, images and videos, in addition to asking concrete questions that are basically related to the learners' daily life. The second step is reading, where the teacher explains key words to help learners understand the gist of

the text. Also, in this stage, the teacher asks questions about the content of the text and the learners either skim or scan the text to get the answers. Finally, comes the post-reading stage, where the grammar points met in the text "teaching grammar in context" are dealt with, or where the learners are asked to produce something written or oral about what they have learnt.

But, how are these oral and written productions carried out?

According to the interviewees, in written production learners are asked to write a short paragraph or a report about the content of the text, while in oral production the teacher may ask questions and learners discuss them in pairs or in groups.

Q4: What are the major difficulties encountered by your learners in reading texts? In your opinion what are the causes behind these difficulties?

The aim of asking this question is to find out which difficulties learners encounter when reading texts and to explore the causes behind these difficulties. The four teachers reported that the most common difficulties encountered by learners in reading texts are pronunciation, lack of vocabulary, and other psychological problems such as anxiety and hesitation. Also, they maintained that most learners are not interested in reading or understanding the text. They added that the causes behind these difficulties are due to the learners' lack of background and carelessness, i.e., learners are not interested in learning foreign languages. On the other hand, teacher B put the blame on the French language because it is studied first by learners where they get accustomed to French pronunciation and spelling. He also said that the lack of genuine sources is another cause for the aforementioned difficulties; added to this are the learners' reliance on bad-quality dictionaries, and the fact that some of them have no access to the internet even when they happen to own smart phones.

Q5: Which strategies do you usually use in teaching reading?

This question was asked to obtain information about the strategies teachers use in teaching reading. The four teachers' answers revealed that skimming and scanning are the most commonly used strategies; learners are asked to read quickly for the first time to have a general idea about the text in skimming. Then, they would be given more time to scan each paragraph, analyze each idea and comprehend each paragraph alone. Teacher B mentioned that he uses these two strategies during the reading stage, while in the pre-reading stage he uses the matching strategy, i.e., matching words with their definitions or with their synonyms.

Q6: Have you attended any training courses or seminars which deal with other strategies that could be used in teaching reading?

This question aimed at checking whether the Algerian educational system pays focal attention to the reading skill through organizing training courses and seminars that tackle this important skill. Teacher B said, "I attended many seminars that dealt with some strategies but we cannot use them in the Algerian school because of the restrictions we face''; he exemplifies such restrictions with the ''story telling'' strategy, claiming that it requires too much time to be properly applied. Teacher A provided two other strategies namely the 'KISS strategy' (the abbreviation KISS stands for Keep It Simple and Straightforward). This means that in reading, the teacher should keep the questions as simple as possible. In addition, another strategy, the TPS strategy (Think, Pair, and Share), is also used. Within this strategy, the teacher asks a question, gives one or two minutes to the learners to think the answer over, and provides learners with two other minutes to share with their partners and finally share out their thoughts in public. Teacher D declared, "I have attended one seminar about

reading a long time ago; it was about the bottom-up and the top-down strategies''. While teacher C stated that he did not remember what the seminar he attended was about, he maintained that when inspectors used to visit them, they always exhorted the teachers to focus on the skimming and scanning skills.

Q7: Have you ever heard about the Mind mapping strategy? What do you think about it? Do you use it in reading sessions?

This question seeks to see whether the interviewed teachers are familiar with the Mind Mapping strategy and to explore their views about this strategy. Teachers A, C, D reported that they are not familiar with the Mind Mapping strategy, stating that "this is the first time I heard about it", but they showed different perspectives about this strategy. Teacher C said, "I think everything that is mapped would be useful for the learners … to make a map means to facilitate complex thing". Teacher D said, "I think it is good and very useful because it can help learners to understand clearly, give production using their own words without relying on the text". Teacher A declared, "I know the map that is used in vocabulary but Mind Mapping exactly, it is the first time I hear about it. But from its name I think it is a useful one". On the other hand, teacher B said that he knew about the strategy and gave his opinion about it saying, "It is a good way to help learners summarizing texts, understanding the general and main ideas, to get specific details related to the text". He added, "It is a good strategy that helps learners to organize the main ideas, and then develop them into paragraphs or essays". When asked:

-   Do you use it in reading sessions?

He responded "yes, but occasionally", then he justified this by saying that the use of this strategy depends on the structure of the text; if the text is well structured, .i.e., the

introduction states the general idea of the whole text and each paragraph tackles one main idea, this would help easily map the text. But sometimes the texts are not well structured, so this technique cannot be used.

Q8: Did you notice that this strategy motivates your learners or improve their reading comprehension? Do your learners enjoy the use of this strategy?

Obviously, this question was not addressed to the three teachers who said that they did not know the Mind mapping strategy (teachers, A, C and D), but it was addressed to teacher B. He responded in the negative, stating outright, "I do not know; this is their personal thing". As he responded previously to the causes behind students' difficulties in the interview, in which he mentioned lack of students' interest, he could not notice its practical benefit for them.

Q9:Would you like to add any other suggestions for improving reading comprehension?

The aim behind asking this question is to look for practical solutions that might have an impact on improving the learners' reading comprehension. Several suggestions were provided by the interviewees, in which they recommended the following:

- In secondary school, the language of the text should be adapted to fit the learners' level because the language of some texts is above the level of learners and even the teachers' level when the text includes some dramatic expressions that are not used in common English.

- More strategies should be used in teaching reading, such as the Mind Mapping strategy and the use of illustrations that help learners guess the meaning of the text.

-Motivating learners to read first, because if they like and enjoy reading, they will certainly understand what they read about.

- Dictation should be added as an extra activity after reading.

- Learners are required to develop their vocabulary through memorization and the use of technology to facilitate the process of learning.

Teacher B added some pieces of advice:

- Learners must master the language first, then mastering the teaching techniques and methodology in a later stage, so that when they become teachers in the future they can equip themselves with efficient tools and prove resourceful to their learners. This would create in the learner self-confidence, expelling anxiety when asked to show his or her capabilities

- For teachers, they should not rely on training courses that remain merely trainings of low levels. Teachers do not benefit from those trainings and they should look for other organizations to provide them with high-quality training.

3.1.5. Findings and Interpretation of the Teacher Interview

Based on the analysis of the teacher interview that was held at Kanchoul Ali and Kerdoud Mohammed high schools in El Milia, it is evident that all teachers, despite their different work experience in teaching English, stressed the importance of the reading skill in learning the English language, as this enriches the learners' vocabulary; moreover, it is the skill that learners would be tested in their formal exams. Also, the teachers emphasized the role of the reading skill in enhancing the writing ability. Additionally, the four teachers agreed on the same steps they usually follow when teaching reading: pre-reading, during reading, and post reading.

All the teachers showed their consciousness about the different difficulties faced by their learners that are classified in terms of pronunciation, lack of vocabulary, comprehension and some psychological problems, such as anxiety. The teachers put the blame behind these difficulties on the French language (pronunciation and spelling), learners' lack of background, learners' carelessness, and the lack of genuine sources.

The interviewees stated that skimming and scanning are the strategies they most commonly rely on and use in teaching reading, and proved that they know about other strategies that might compete with mind mapping in teaching reading such as the KISS, TPS, and Story-telling strategies. Although all the teachers revealed positive perspectives about the Mind Mapping strategy, agreeing that it is a good and a very useful strategy to help learners understand texts by using their own simple words in a map, most of them confessed. However, that are not familiar with it and they never used it, except for teacher B who said he knew it but occasionally used it, confessing that not all the texts can be mapped because some texts are not well structured.

For the sake of improving the learners' reading comprehension, teachers suggested some solutions, such as the use of illustration, adapting the language of the texts to match the learners' level. They also suggested that more strategies should be adopted, such as the strategy of Mind Mapping as well as dictation, which was suggested as an extra activity to ensure the learners' reading comprehension, and that learners should be motivated to like and enjoy reading.

3.2. Classroom Observation

3.2.1. Description of the Classroom Observation

In this study, the classroom observation was chosen to be the second tool as it is believed to be the most appropriate for our research work. The aim of this classroom observation lies at the heart of the research itself, which is to investigate how the Mind Mapping strategy is used and what role it really plays in the Algerian secondary classroom. Also, the classroom observation allows for the possibility to draw direct and truthful insights from teaching and learning practice in real-world environment. Since there is a direct contact between the researcher and the class, the constructs observed would be more validly and reliably assessed.

The classroom observation was conducted over six teaching sessions that started on April, 2019 at two secondary schools in El-Milia: Khanchoul Ali and Kerdoud Mohammed secondary schools.The aim behind choosing two secondary schools is to ensure the use of the mind mapping strategy i.e., if it happens not to be used in the first secondary school, it may be used in the second one. On Thursday, the 18th April 2019, the researchers attended the first session in Khanchoul Ali Secondary School with the Letters and ForeignLanguages stream from 08:00 to 09:00. After having carried out an observation in Khanchoul Ali Secondary School in SidiMaarouf, we moved to Kerdoud Mohammed Secondary School in OuledRabeh on 21st April from 09:00 to 10:00 with Letters and Philosophy stream. The third observation session was conducted inKhanchoul Ali Secondary School on 22nd April from 10:00 to 11:00. The fourth and the fifth observation sessionswere carried out in Kerdoud Mohammed Secondary School from10:00 to 11:00 and from11:00 to 12:00. Finally, the last observation session, which was conducted on Monday the 29th, took place in khanchoul Ali Secondary School from 14:30 to 15:30.

3.2.2. Data Collection

The researchers took the permission from the administration of both secondary schools to check the timetable of the teachers first, and thento check the teachers' time of reading sessions. During the researchers' attendance, they sat in the last corner in the classroom for the sake of monitoring all what was happening during the sessions. Both learners and teachers were observed in the classroom by the researchers, who relied onnote taking to monitor the behavior of the participants.

3.2.3. Classroom Observation Analysis

This section is concerned with the analysis of data gathered during the classroom observation sessions in order to provide an overview of how reading sessions are presented in EFL classes with a particular emphasis on the use of the Mind Mapping strategy.

The researchers attended the first and the third reading sessions with teacher D in Khanchoul Ali secondary school in which the first session was about the American Educational System, the second was about 'Feelings'. The teacher kindly welcomed his students and smiled at them, then before starting the new lesson, he made sure that the previous lesson was understood. The researchers noticed that the teacher warmed-up his both lessons by asking concrete questions about learners' daily life which raised their interest, and the learners actively interacted with him. Also, what the researchers remarked was that the teacher presented the lessons with a clear and loud voice. During the explanation of the text, he asked students about unfamiliar words and expressions where he used gestures, facial expressions, synonyms, opposites and translating to Arabic from time to time and writing them on the board. In addition, the researchers noticed that some students were listening attentively who were praised for

giving correct answers (right, good, very good, excellent) while others were making noise and seemed not interested in the course. Thus, the teacher called on by their first names and requested them to keep silent and follow him. Some students asked questions and gave answers in Arabic but the teacher insisted on the use of the target language inside the classroom.

Furthermore, the teacher relied only on the whiteboard and the textbook without any use of the well-designed materials. Another thing that was noticed during the classroom was that when the teacher gave his students a task or a small activity to do, he walked to the learners' tables and checked their works. He appeared friendly with his learners and they seemed relaxed when discussing with him their answers.

Moreover, the skimming strategy was used at the beginning of the lesson, in which the teacher asked questions and learners directly skimmed the text and gave answers. In addition, he gave the students eight minutes to scan the text and look for answers. The teacher gave his learners activities from the textbook to be done through pair work in addition to other extra activities that were not included in the textbook. Although, the teacher used colors and wrote keywords on the board in both lessons, he did not make a connection between them to form a Mind map. Also, he did not give a summary for the presented lessons.

The second observation session was conducted in Kerdoud Mohammed Secondary School with teacher B. Unlike teacher D, teacher B did not warm-up his lesson; he directly started the reading session by describing the picture provided in the textbook. Then, he gave an extra activity in which learners were asked to match words with their definitions. During the reading stage, the teacher explained the presented questions in the textbook and gave the learners five minutes to read and skim the text

to look for the answers. In addition, students used the inferencing strategy i.e., reading between lines to find out an answer that was not directly stated in the text. It was also noticed that some learners seemed unmotivated and uninterested,making instead a lot of noise, except for those who were sitting in the front tables who were praised by the teacher for their participation and interaction. Furthermore, the teacher explained unfamiliar words by providing their definitions or translating them directly into Arabic. Besides, the teacher walked to the learners' tables to explain the activity and check their answers. But learners seemed uninterested focusing only on writing down what was written on the board.Moreover, the teacher relied onlyon traditional materialssuch as a marker pen, whiteboardand the textbook without giving a summary for the content of the lesson.Unfortunately, the teacher did not use the Mind Mapping strategy in this session.

The researchers attended the fourth and the fifth sessions that were presented by teacher A with two classes of the Letters and Philosophy stream in Kerdoud Mohammed Secondary School. The teacher presented the same lesson entitled 'feelings' to the two classes. The teacher warmed-up her lesson by drawing different emojis that indicated different feelings; smiling, laughing, crying, showing anger. Then she asked her students 'do you often cry in public?', 'if someone cries in front of you how would you behave toward him or her?'The researchers remarked that when students were called to give and share their opinions, they mainly used Arabic but the teacher insisted on using the English language. While explaining what each emoji represents, she wrote the keywords with their opposites and their grammar category on the board in a cyclic way, then she asked her students to relate all the presented words to one key word, yielding a Mind map centered on the keyword "feelings".
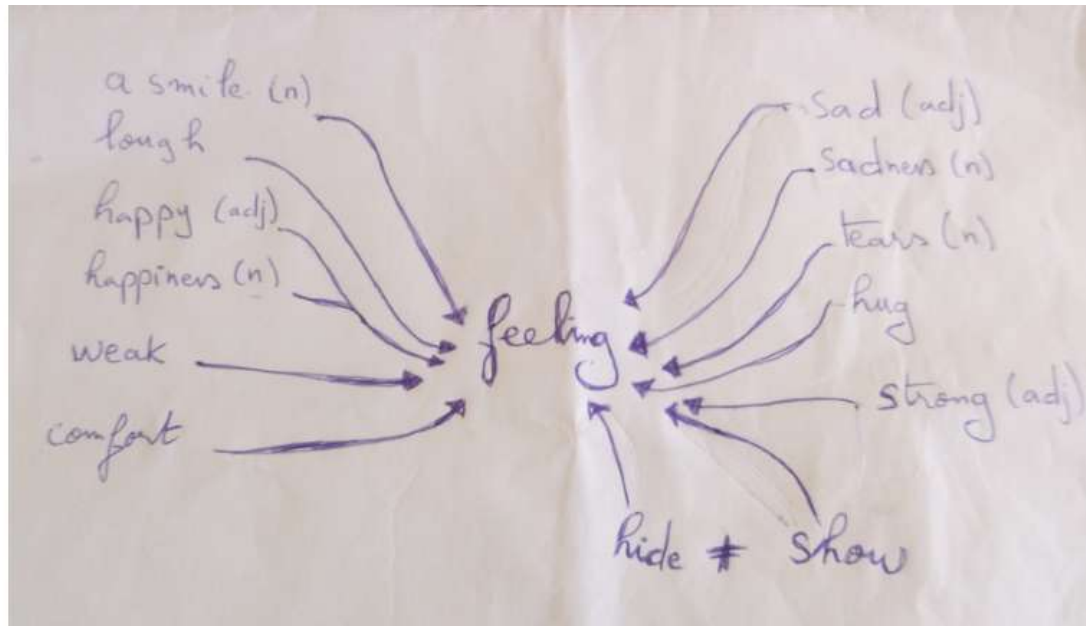
Figure 9: A Mind Map Created by Teacher A

After that, the teacher gave her learners an extra activity about matching other key words with their definitions (introvert, extrovert, phlegmatic), then she asked them to skim the text to provide appropriate answers. Another thing that the researchers observed was that most students seemed interested and interacted with the teacher who praised them even when they made mistakes. By the end of the reading session, the teacher did not give a summary to the lesson; instead, she gave a grammar task from the baccalaureate exam of 2017.

The last session was conducted at Khanchoul Ali Secondary School with teacher C. The teacher welcomed his students and wrote down the date on the board.He directly started his reading lesson by describing the picture provided in the textbook to let the learners guess what the text is about. In contrast to the other teachers, teacher C gave his learners five minutes to read the text silently; then, he asked one learner to read aloud the first paragraph, and the teacher read it again and explained it sentence by sentence by translating to French or Arabic. The teacher kept doing so with all the

paragraphs and asked his learners to identify the main idea for each. Also, the teacher provided an extra activity, namely the true or false activity, in which the learners were asked to skim and scan the text to find answers. He praised those active students and asked them to write down their correct answers on the board, using only the traditional materials. What attracted the researchers' attention was when the teacher used proverbs that described the lesson's content. In addition to that, he was very active, speaking with a loud voice from the beginning till the end of the session. Throughout the whole session, the researchers noticed that there was no use of the mind mapping strategy.

3.2.4. Discussion of the Classroom Observation

Through the classroom observation that was conducted in two secondary schools in El-Milia, the researchers found that not all the teachers initiated their reading sessions with a warm-up; some of them directly started their new lessons without reviewing or refreshing the learners' mind. On the other hand, all the teachers followed the PDP framework in teaching reading, namely pre-reading, during reading, and post reading. Also, the researchers remarked that there was no use of well-designed materials; instead, all the teachers used the traditional tools of textbook, whiteboard, and the marker pens. Additionally, teachers provided extra activities that were not included in the textbook, while skimming and scanning were the only used strategies in the reading sessions. Besides, teachers explained unfamiliar words through synonyms, opposites, or translating to French and Arabic to ensure the learners' comprehension. In addition, the researchers observed that most learners were not really interested in learning, instead they were passively sitting and waiting for the teachers to finish the lesson, except for a few number of them who seemed interested and did their best via interacting with their teachers.

Concerning the Mind mapping strategy, the researchers did not notice any use if this strategy in Khanchoul Ali Secondary School. While in Kerdoud Mohammed Secondary School, teacher A used this strategy, but did not apply its rules. That is to say, the teacher did not apply the Mind Mapping rules that were previously stated in chapter one by Tony Buzan such as centering a colorful image that summarizes the topic and branches it out to the main ideas, using curved and colorful lines. Using colors add life to images and make it more fun and enjoyable so as to attract the learners' attention and let them concentrate more on the lesson and easily remember it. Nonetheless, teacher A started by writing the keywords in a cyclic way then she linked them to the central keyword "feelings", without using colors, images or any symbols. As a result, the teacher's ignorance of the basic rules of the Mind Mapping strategy minimized its efficiency as a reading strategy. Also, the short time allocated to Mind Mapping did not allow the researchers to perceive well the role of Mind Mapping strategy in improving the learners' reading comprehension.

To sum up, the classroom observation revealed that the Mind mapping strategy was slightly used in the reading sessions; only one teacher out of four used it without properly applying its basic rules. The teachers' focus was mainly placed on implementing what was provided in the textbook, striving to finish the syllabus rather than adopting other strategies that would help improve the learners' comprehension.

3.3. Findings of the Empirical Study

The present work aimed at checking the use of mind mapping in the reading sessions. The findings of the analysis and the discussion of both the classroom observation and teachers' interview have shown the following findings:

1. Mind mapping is slightly used in teaching reading; only one teacher out of four used this strategy incidentally for approximately five minutes at the beginning of the reading session, without applying its basic rules.

2. Mind mapping is used in conjunction with other strategies such as inferencing and previewing. This combination helps the applicability of Mind Mapping in which students rely on their background knowledge to identify the grammar category of the words and their opposites.

3. All teachers believed that by implementing Mind mapping strategy, they can improve students' reading comprehension because it helps them to generate and organize ideas.

4. Teachers do not strictly follow the textbook activities; some teachers provide extra activities that are not included in the textbook. They are requested to include Mind mapping in the extra activities.

5. It could be noticed from the classroom observation that Mind mapping raised the learners' interaction, because they looked motivated to propose their own words and expressions when asked by the teacher to do so.

6. The Algerian educational system does not provide teachers with effective strategies such as the Mind Mapping strategy to enhance students' reading comprehension.

Conclusion

This chapter is concerned with the analysis of the data collected from the teacher' interview and classroom observation. Thus, the presented chapter was devoted to discuss and highlight the main yielded findings which revealed that not all third year secondary school teachers are familiar with Mind Mapping strategy; it was

known by only one teacher out of four. Additionally, all the interviewed teachers showed positive perspectives and views about the Mind Mapping strategy and its use in in the learning process. Besides, the results in this study revealed that Mind Mapping strategy could be used by secondary school teachers, but incidentally and unconsciously according to the rounded situations. Moreover, it was noticed that Mind Mapping strategy increased learners' interaction; learners liked interacting with the teacher via giving their own words while creating Mind maps.

General Conclusion and Pedagogical Recommendation

The present research work falls within the ambit of English language teaching. It started by asking the following four questions: do Algerian secondary school teachers use the Mind Mapping strategy in teaching reading?, if the Mind Mapping strategy is used in the Algerian secondary schools, do teachers comply with its rule? , if the Mind Mapping strategy is used in the Algerian secondary schools, what role does it play in the classroom? and what attitude do Algerian secondary school teachers hold towards the use of Mind Mapping as a reading strategy?

To answer the aforementioned questions, the following assumptions were formulated: first, Algerian Secondary school teachers use the Mind Mapping strategy in teaching reading. Second, Algerian Secondary school teachers follow the rules of Mind Mapping when they use it in the classroom. Third, Mind Mapping plays an important role in teaching reading in the Algerian secondary school classroom. The last assumption is Secondary school teachers hold a positive attitude towards the use of Mind Mapping as a reading strategy.

As regards the first, second and third questions, the analysis of the classroom observation revealed that most secondary school teachers did not use Mind Mapping strategy in teaching reading except one teacher who used it. The one who use it did not actually apply its rule set forward by researchers as shown in the first chapter. The fact that the majority of teachers did not use the Mind Mapping strategy and that even the one who used it did not comply with its rules casts doubt about the efficiency of the role it plays in the Algerian secondary school. As an answer to the fourth question, the analysis of the teacher interview revealed that all the interviewed teachers showed positive attitude towards the use of Mind Mapping strategy stating that it is a good and

useful way to help learners understand texts through the use of their own simple words, pictures, and drawings. Thus, the findings of this study disconfirmed the first three assumptions, while they confirmed the fourth remaining assumption.

This study differs from other studies mentioned in the literature review in that it was conducted on the reading skill, addition to that, the time devoted to teach English as a foreign language in Algerian secondary school may decrease the effectiveness of such useful strategies. The study's contribution highlights the reality in the Algerian secondary schools where strategies and techniques are given little interest by both the curriculum designers and teachers.

The present research has several ramifications that deserve investigation. The researchers would like to recommend the following for future research: future research is needed to design experiments and tests to investigate the effect of using Mind Mapping strategy on the enhancement of learners' reading comprehension. It is also worthy to design tests and experiments to see which reading strategies are best and likely to increase learners' reading comprehension. To elicit more information, future researchers might conduct studies so as to detect the effect of Mind Mapping strategy on other skills, such as speaking and writing. In addition, it is very worthy to explore effect of strategies on EFL learners' accuracy and fluency. Furthermore, curriculum designers should put Mind mapping in the list of their strategies when designing English language teaching curricula. Consequently, the Mind Mapping strategy has to receive a huge amount of interest among syllabus designers and teachers alike. Moreover, teachers should be provided with training periods on the up-to-date teaching strategies, including the Mind Mapping strategy. Teachers should diversify activities that would stimulate the learners' thinking so that they can benefit from the strategies used in the classroom. Teachers should not rely only on strategies provided

in the textbook. Instead, they should adopt other strategies that would fit the teaching

process of each skill. Also, teachers should use the ICTs tools to attract the learners'

attention and arouse their interest in learning.

3.4. Limitations of the Study

As any other research, the present study faced a number of limitations:

- The researchers would have liked to conduct an experiment, but for time constraints they could not.

- There was a lack of references concerning the first chapter. Therefore, much time was lost looking for the sources.

- Another obstacle was the limited number of the teachers whom the interview was conducted with. The researchers intended to interview a large number of teachers, but unfortunately they were allowed to enter only two secondary schools and since we dealt only with third year English teachers, the data gathered were limited and cannot be generalized.

- Another encountered limitation took place when conducting the classroom observation itself as the researchers did not have the chance to attend a sufficient number of sessions.

- Concerning the teachers' interview, one teacher refused to be recorded, which obliged the researchers to rely only on taking notes of what she said.

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MIND MAPPING AND READING COMPREHENSION

Appendix : Teacher Interview

Teacher A:

Q1: How long have you been teaching English in secondary school ?

-I have been teaching English in secondary school for eight 8 years.

Q2: What is the main skill you usually focus on when teaching English?

-I focus on reading because it enhances students' vocabulary, helps in writing; when they understand the text with its vocabulary later on they will find it easy in written production.

Q 3: What are the steps you usually undertake in teaching reading?

-I usually follow the three steps; before, during, and after reading.

-How do you introduce each phase?

-I usually introduce the theme of the text through pictures or videos. Then I ask my students to do the activities either from the textbook or bringing extra ones related to the theme of the text. In the last phase, it is a production. Some time I ask them to write short paragraphs or ask them to answer the question orally.

Q 4: What are the major difficulties encountered by your students in reading texts?

-The major difficult is the lack of vocabulary. Because when they understand the vocabulary in the text they automatically comprehend the text. Also, pronunciation is another problem.

   - What are the causes behind these difficulties?

- I think lack of interest, they do not try to look for the meaning of new words.

Q 5: What are the strategies you usually use in teaching reading?

-I usually use those that are mentioned in the textbook; I mean skimming and scanning.

Q 6: Have you attended any training courses or seminars which deal with other strategies that could be used in teaching reading?

-yes, I remember once the inspector said to us to use KISS strategy in teaching reading; this strategy is about questions which means keep it simple straightforward. And another one that he recommended us to use is TPS; Think, Pair, Share. This means that the teacher should give time to his students to think with themselves and then give them to discuss their ideas with their partners then share their ideas in public.

Q 7: Have you heard about Mind Mapping strategy? What do you think about it?

-I know the Map but Mind Mapping strategy I do not know it. Since it is a map, I think it is a good one to facilitate learning.

Q 8: Did you notice that this strategy motivate your students or improve their reading comprehension? Do think that students enjoy the use of this strategy?

-This question was not asked since the teacher does not know the strategy.

Q 9: Would you like to add any other suggestion for improving learners' reading comprehension?

-Vocabulary is the key for comprehension and students should memorize it. And they should look for the meaning of new words through the use of technology.

MIND MAPPING AND READING COMPREHENSION

Teacher B:

Q 1: How long have you been teaching English in secondary school?

I have been teaching English in secondary school for 4 years.

Q 2: What is the main skill you usually focus on when teaching English?

We usually focus on reading and writing because they are the main skills that students would be tested in their final exams. But for me, all the skills are essential.

Q 3: What are the steps you often undertake in teaching reading?

Teaching reading requires three main steps: before reading in which the teacher introduces new vocabulary, introduces the topic of the reading task, and asking some questions. During reading; the teacher asks questions about the content of the text either students skim or scan to get the answers. After reading; students will be either started an oral conversation or introduce some grammar tasks related to the text.so students will learn grammar in context. About oral conversation, sometimes it is a conversation between two students, other times it is between teacher and students (teacher asks questions and students will develop them into ideas.

Q 4: What arethe major difficulties encountered by your students in reading?

I think the major difficulties are: first, is understanding the meaning of words (students are not familiar to English words. Second problem is pronunciation (students usually mix between French pronunciation and English one). Sometimes, they have psychological problems like shyness; they are shy to speak English even good students feel shy to speak. The most important problem is that students do not want to learn the language; they are not interested at all. Additionally, most students do not comprehend English texts.

-What are the causes behind these difficulties? I think the causes are: first is the French language because students studied it first from primary school, so students get accustomed to French pronunciation, spelling, vocabulary. Students interest in study; they lack interest in study in general and foreign languages in particular. Another cause is that lack of genuine sources of English; they buy dictionaries of bad quality and they have no access to internet even most of them have smart phones.

Q 5: What are the strategies you usually use in teaching reading?

In introducing vocabulary, I usually use matching words with their definitions, sometimes words with their synonyms.

-In which stage? I use it in pre-reading stage. While reading, I use skimming and scanning.

Q 6: Have you attended any training courses or seminars which deal with other strategies that could be used in teaching reading?

I attended many seminars but we can not use them in Algerian schools because of restrictions we have. Some strategies as story telling are used in teaching reading, but the Algerian educational system does not allow such strategies to be applied since it requires time.

Q 7: Have you heard about Mind Mapping strategy? What do you think of it? Do you use it in reading sessions?

Yes, I heard and I think it is a good way that helps learners summarizing texts, understanding the main and general ideas and get specific details about the text. It provides an overview of the text, also it is a good strategy that helps students to write (they write the main ideas then develop them into paragraphs).

-Concerning its use, I use it time but incidentally. Because its use depends on the structure of the text itself; if the text is well structured.i.e.,the introduction states the general idea of the whole text and each paragraph states one idea, so this would help the students to comprehend very well. However, some texts are not well structured, so this technique can not be used.

Q 7: Did you notice that this strategy motivate your students or improve their reading comprehension? Do your students enjoy the use of this strategy?

I think they like to give their own words. I do not know this is their personal thing.

Q 9: would you like to add any other suggestions for improving students' reading comprehension?

In secondary school, the text should be adapted to fit the students' level and I would suggest that more and more strategies should be followed such as this of mind mapping strategy. Also, some illustrations should be provided such as pictures, some texts are pictureless and as you know through pictures students can guess the topic of the text. I insist on the adoption of the text language because some texts are above the level of students and even of the teachers; you may find dramatic expressions that are not used in common English

MIND MAPPING AND READING COMPREHENSION

Teacher C:

Q 1: How long have you been teaching English in secondary school?

 I have been teaching English in secondary school for 12 years.

Q 2: What is the main skill you usually focus on when teaching English?

Mainly I focus on the four skills; speaking, reading, listening, and writing. I think listening and reading are the most beneficial ones for the learners according to my experience.

-Could you explain how? Because listening can develop the pronunciationof learners. Reading also enriches the vocabulary of learners.

Q 3: What are the steps you often undertake in teaching reading?

They are the most common ones, the steps are before, during, and post reading. All teachers I think use this method BDP.

-How you often introduce each phase?

In pre-reading, mainly I use pictures like those mentioned in the text book or I bring some other ones that I see they are useful for the lesson. Well, for during reading I usually ask the learners to read silently. Then I ask them to read aloud because I think reading aloud is beneficial for them, mainly for the speaking skill.

For the post reading phase, it may be a production, tackled as a final activity to summarize what they have seen in the lesson.

Q 4: What are the major difficulties encountered by your students in reading?

Mainly, most learners hesitate to read, they do not like to read because they did not used to read even in the native language. They have difficulties in pronunciation; they hesitate to

pronounce new language. Also, the most common problem is vocabulary; they do not have rich vocabulary that enable them to comprehend texts.

-What do you think the causes behind these difficulties? I think previous knowledge lack of background knowledge. Also, carelessness, they do not interest in the module of English as a whole.

Q 5: What are the strategies you usually use in teaching reading?

All the time , we ask learners to read for the first time in order to get the whole idea, the whole topic, the meaning of the text as the skill of skimming. The second strategy is scanning, students have much time to scan each paragraph and analyze each idea to comprehend the whole text. Scanning is for asking for specific information.

Q 6: Have you attended any training courses or seminars which deal with other strategies that could be used in teaching reading?

In seminars, I do not remember but mainly inspectors when they visit us they always insist on that skill of skimming and scanning.

Q 7: Have you ever heard about Mind Mapping strategy? What do you think of it? Do you use it in reading sessions?

May be it is the first time I hear about it but I think it is useful. Because each thing which is mapped it is useful.to make a map means to facilitate and make thing easy for the learners.

Q 8: Did you notice that this strategy motivate your learners or improve their reading comprehension level? Do your students enjoy the use of this strategy?

This question was not asked.

Q 9: Would you like to add any other suggestions for improving learners' reading comprehension?

I suggest dictation, I think dictation is something necessary for learners, I do not know why this technique was omitted from the syllabus

-Do you mean dictation during reading?

Not during reading, dictation is something related to production, as an extra activity which improves the level of learners in writing.

MIND MAPPING AND READING COMPREHENSION

Teacher D:

Q 1: How long have you been teaching English in secondary school?

I have been teaching English in secondary school for 10 years.

Q 2: What is the main skill you usually focus on when teaching?

Well, when teaching we focus on reading and writing.

-Why so? Because of preparing students to pass the baccalaureate exam at the end of the school year, and you certainly know that in the baccalaureate exam students are not tested in other skills, speaking and listening. So, what is tested in is reading and writing.

Q 3: What are the steps you often undertake in teaching reading?

Well, the steps are those ones known pre-reading, during, and post reading.

-How do you usually introduce your lesson in pre-reading stage? Usually and you may have noticed, I always start with concrete questions which are essentially and basically related to the learners' daily life in order to motivate them.

-Do you often introduce your lesson images and pictures? Yes, sometimes yes. For instance, last time with second year about noise pollution, I began with the presentation of some pictures which show plains, cars, factories that produce sounds which are dangerous for ear. As soon as they see the pictures, they understand what the topic is about.

-This is for pre-reading, what about during reading? During reading, we emphasize on the key words because they help to enlarge the extent the pupils understand the topic, the general idea of the topic.

-So, here you explain the new words? Yes certainly. Do you explain them by giving synonyms, opposites or you translate? Not directly. I let them the opportunity, may be some pupils and this occasionally happens, some students can know and give you synonyms but in Arabic. If I noticed that they do not have enough information or they ignore the meaning of the word, I try to facilitate. Sometimes I give them the meaning directly in Arabic.

-Ok, what about post reading stage? Well, post reading stage generally deals with grammar points which we must reach in order to give a clear hint about the coming lesson. Sometimes, students are given activities about the text itself, not necessary related to grammar but to writing for instance they write a report.

Q 4: What are the major difficulties encountered by your students in reading texts?

Before explaining this point, I would like to tell you that there is a major problem which is all most not all but all most and the majority of the pupils and not only the pupils, because I have noticed this among old people even cultured people, they do not like to reading; if you ask someone to read it seems as if you have asked him to do a miracle. So, the major problem here is how to motivate these pupils to accept the fact that reading may be useful for them. As far as this point, I concerned the main difficult point here is pronunciation, even though it is not important point.

-So, you do not focus on pronunciation in reading? No, we focus but not high degree or large extent . Vocabulary is another important point. Also, students can not distinguish different grammar category, for instance, a pupil is reading a text, he does not manage to identify the subject, the verb and the direct object. In this case they can not understand any thing. because where is the subject, where is the verb that indicates the action; if the subject is so long for instance is composed of three or four words, the pupils may take only

the word as subject and the second for instance they take it as verb even though it is a noun and the first one is an adjective.

-What about comprehension? Do your students understand while reading? A very small number of them understand by their own. But after explanation they reach the point and understand it.

-What are the causes behind these difficulties? The causes behind these difficulties are: first, the lack of vocabulary off course. Then the lack of previous knowledge is another cause.

-Do you think they are interested in learning foreign languages? A very limited number of them, they are not interested.

Q 5: What are the strategies you usually use in teaching reading?

 We have skimming and scanning and certainly you know the difference between the two, in addition to the top-down and the bottom-up.

Q 6: Have you attended any training courses or seminars which deal with other strategies that could be used in teaching reading?

Yes, I have attended one seminar but a long time ago, it was about these of top-down and bottom-up.

Q 7: Have you ever heard about Mind Mapping strategy? What do think about it? Do you use it in reading sessions?

No, it is the first time. And I think it is very good and very useful. Because it can help the pupils to understand clearly and they can give their production through the use of their own words without relying on the text.

Q 8: Did you notice that this strategy motivate your students or improve their reading comprehension? Do they enjoy the use of this strategy?

This question was not asked.

Q 9: I think we need to motivate them to read first, because as the old proverb states "when you want you can". If they like and enjoy reading, they will certainly understand.

Résumé

La lecture est l'une des quatre compétences linguistiques qui nécessitent l'interaction entre le lecteur et le texte dans lequel l'ancien intègre les connaissances antérieures avec un certain nombre de compétences et des stratégies pour interpréter le sens du passage écrit. Par conséquent, les stratégies de lecture sont très essentielles pour assurer la compréhension de la lecture des apprenants. En conséquence, la présente étude vise à étudier l'utilisation de cartographie mentale comme une stratégie pour améliorer la compréhension de la lecture des apprenants dans un contexte algérien. Cette recherche vise également à confirmer ou rejeter les hypothèses suivantes: 1) les enseignants du secondaire utiliseraient esprit stratégie de cartographie en enseignement de la lecture; 2) les enseignants du secondaire suivraient les règles de la cartographie mentale; 3) la cartographie mentale jouerait un rôle important dans la lecture de l'enseignement, 4) et les enseignants du secondaire auraient une attitude positive envers l'utilisation de cartographie mentale comme une stratégie de compréhension de lecture. Pour vérifier la validité des hypothèses mentionnées ci-dessus, un entretient avec les enseignants et une observation en classe ont été utilisés comme outils de collecte de données. L'entretien a été administré à quatre troisième année les enseignants du secondaire à Khanchoul Ali et Kerdoud Mohammed El-Milia, Jijel, et l'observation en classe a été réalisée dans les mêmes écoles secondaires au cours de six séances sur la troisième année les élèves des écoles secondaires de deux courants: les lettres et flux de langues étrangères et les lettres et la philosophie flux. Les résultats montrent que les trois premières hypothèses ont été infirmées alors que le quatrième a été confirmé. Par conséquent, il est hautement souhaitable de prendre en compte la recommandation pédagogique fournie à la fin de cette recherche.

ملخص

إن القراءة هي إحدى المهارات اللغوية الأربع التي تتطلب التفاعل بين القارئ والنص، إذ يدمج فيه القارئ مكتسباته القبلية مع مجموعة من المهارات و الاستراتيجيات لفهم مضمون النص المكتوب و بالتالي فإن إستراتيجيات القراءة ضرورية جدا من أجل تأكيد فهم المتعلمين للنص، وفقا لذالك تسعى الدراسة الحالية إلى التحقق من استخدام إستراتيجية الخريطة الذهنية في المدرسة الثانوية الجزائرية، ويهدف هذا البحث أيضا إلى تأكيد أو تفنيد الافتراضات التالية : 1) يستخدم أساتذة الطور الثانوي استراتيجية الخريطة الذهنية في تدريس القراءة، 2) يتبع أساتذة الطور الثانوي قواعد إنشاء الخريطة الذهنية في تدريس القراءة، 3) تلعب الخريطة الذهنية دورا فعالا في تدريس القراءة، 4) يتخذ أساتذة الطور الثانوي موقفا إيجابيا تجاه استخدام الخريطة الذهنية كاستراتيجية لفهم القراءة وبناءا على ذلك قد تم الاعتماد على مقابلة شفوية مع الأساتذة و إجراء تحقيق عبر الملاحظة داخل الأقسام كأدوات لجمع البيانات للتحقق من صحة الافتراضات المذكورة أعلاه، حيث تم إجراء المقابلة الشفوية مع أربع أساتذة من ثانوية كردود محمد وثانوية خنشول علي بالميلية، أما الملاحظة داخل الأقسام فقد تم حضور ست حصص مع تلاميذ السنة الثالثة ثانوي من شعبة آداب و لغات أجنبية و شعبة آداب و فلسفة في الثانويتين نفسهما.إذ فندت النتائج المتحصل عليها الافتراضات الثلاثة الأولى، في حين تم تأكيد الافتراض الرابع، لذلك من المستحسن أن تأخذ التوصيات التربوية المقدمة في نهاية هذا البحث بعين الإعتبار.