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The Role of Mind Mapping in Improving Students'Memorization Strategies.

The Case of First Year LMD Students at Biskra University

A Dissertation Submitted to the Department of Foreign Languages as a Partial Fulfillment of the Requirements for the Master Degree in Science of the Language

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Dedication

I dedicate this work to:

My parents

My future husband

My big family

My friends

Acknowledgments

It is hard to believe that five years are already gone; I have been lucky enough to spend them, here at Mohammed Khieder University of Biskra, full of joy and satisfaction. Writing an MA degree dissertation is a very exciting experience full of challenges. There are therefore some special people I would like to thank for their assistance during this process. I would like to thank my supervisor ***Mr. Bechar Maàmar*** for his invaluable patience and guidance.

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Abstract

This study is aims to investigate the role of Mind Mapping on students' memorization strategies. We hypothesised that the use of Mind Mapping technique will improve students' memorization strategies. The present research focuses on assessing the feasibility and the applicability of the Mind Map technique as an effective tool for summarizing, understanding, and recalling information. To achieve the objectives of the study, a descriptive qualitative method was followed. It aims to describe two variables: Mind Mapping as the independent variable and memorization strategies as the dependent variable. In this dissertation, we presented a new technique which considered as brain friendly technique for transmitting and recalling information which is Mind Mapping technique it has proven to be a good technique for memorizing, creative thinking, and learning. Our main research instruments to collect data were two questionnaires administered to both teachers and students. The sample of the research is 5 teachers and 50 first year LMD students, at the department of foreign languages, field of English, University of Biskra. After analysing the obtained data of the present research, it revealed that Mind Mapping is an effective, practical teaching and learning technique. It can positively affect and develop students' memorization strategies. In fact, teachers and students showed positive attitudes towards it. Finally, on the basis of our findings, some recommendations and pedagogical implications are suggested and we hope that they may be of help to students in using Mind Mapping technique during learning.

Keywords: Mind Mapping, memorization strategies, effectiveness, learning technique, first year, UMK Biskra.

List of Abbreviations

EFL: English as a Foreign Language

ESL: English as a Second Language

FL: Foreign Language

UMK Biskra: University Mohamed Kheider of Biskra

SM: Sensory memory

WM: Working memory

LTM: long- term memory

STM: short- term memory

Q: Question

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General Introduction

Introduction

Learning a foreign language is becoming one of the most important needs for communication among individuals. Foreign language learners need to acquire a number of information in the target language in order to fulfill success at University level .The process of presenting ideas in a form of words can take learners to be less motivated and bored . During learning , transmitting ideas can be difficult for some students and easier for others . It depends on the brain work and the level of intelligence .The traditional way of learning based on using a wall of words and the blue pen .Consequently, symbols, colours, images and numbers are used. Many techniques are now utilize to increase memory recall and to improve reading and taking notes to answer all important exam questions.

Buzans' studies confirmed that it is necessary to think about a powerful technique that supports the learning process and helps the brain to store information .It should affect the brain to work and improve his capacities .In this research, we aim to present the mind map technique as a new method for teaching and learning. Mind Map is a digital form of taking notes that takes an overview about a topic and its information , also builds new ideas and creates relations between connections. Also, it reduces the tone of work and helps the students to feel good about study during the revision and exams. Moreover, the learner s' abilities will be increase and the information will be fixed in the brain for a long time. Mind Map allows us to summarize lectures effectively and in such way as to make it usable and accessible. Making a Mind Map is an excellent way for students to be able to sort thoughts. This activity allows learners to generate ideas in less time. It gives the freedom to brainstorming so the flow of ideas is not blocked like linear

thinking. This method is a great way to organize ideas that the students brainstormed by using a single page that already replace a huge amount of information. It can even help to discover new relationship among unrelated ideas. The use of Mind Map by students make learning more interested and motivated them to remember important ideas.

Statement of the problem

Acquiring a language is one of the big challenges for both EFL/ESL students who want to communicate effectively. Many students at university level face difficulties in learning a second or foreign language, especially in remembering information, or when the teacher asks questions about previous lectures .This problem refers to the strategies that are used by the students to prepare lectures. Most of the students face problems on memorizing information during conversations or exams days'. Students have a challenge to find a good technique that helps them for storing thoughts and ideas in a useful way. Mind Mapping is the tool that can help students to memorize new ideas in the classroom. First year English students at Biskra University face problems in retrieving information especially in the exams when the question s needs to be more specified. In brief, we will present the Mind Map for students to be familiar with this technique and how to use it.

Significance of the study

Most of the students start directly in the process of learning without know how to learn .Effective learner is the one who can remember information and communicate meaningfully .This work present Mind Map technique in order to deliver the information to the brain in a friendly way .This research is conducted for one reason; for learners to be aware about Mind Mapping technique and how to use it in order to save information for a long time and remember quickly in a short time.

Aims of the study

The main objective of this study will aim to present Mind Mapping technique and whether this technique has an effect for improving the student remembering and storing information for a long time.

Key terms

Mind Mapping, Memorization Strategies, English Field, and Mohamed Kheider University.

Research questions

This work tries to answer two main questions:

1- What is Mind Mapping technique and how to use it?
2- How can students memorize information and ideas with Mind Mapping?

Research hypothesis

In the light of the research questions above, we hypothesize:

If students use the Mind Mapping technique, the effectiveness of receiving and recalling information will increase.

Research methodology

To answer the research questions and test our hypothesis, we have followed the descriptive qualitative method. The main data collection instruments are two questionnaires, one for teachers and one for students. The sample population of our study consists of 5 teachers of English language and 50 first year LMD students at Biskra University. The participants are randomly chosen. The obtained data are analysed by percentage and illustrated in tables and pie charts.

Method

The chosen of the qualitative research method was due to the aim of the study. That is why we will decide to use a descriptive method to describe the data that will be collected. Since it is considered the most appropriate method for human science, it is going to give a result about the role of Mind Map in improving students' memorization strategies.

Population and sampling

The study group consists of 5 teachers' candidates in the department of English teaching at Mohamed Kheider University of Biskra, from the entire population of 38 teachers. Also, we are selected randomly 50 students of first year at Biskra University from 551 students.

Research tools

We will work with well-known research tool: the questionnaire .From one side, the teacher‘s questionnaire to know their opinions about the use of Mind Map technique in summarizing lectures. Second one is for students to catch up the effectiveness of Mind Mapping tool on retrieving information and ideas about the lectures.

Limitations

There are limitations to this study faced us in the environment when the data was collected. Indeed we have faced problems on the references because the technique of mind mapping is exclusive and not well known in Algeria.

Organization of the dissertation

This dissertation is divided into three main parts. The first part is devoted to present an introduction of the study, statement of the problem and aims of the study, in addition to the main hypothesis, research questions and research methodology.

Moreover, the second part is the theoretical that consists of two chapters. In the first chapter, we present a background study about Mind Mapping technique, definition, the founder, how to make a mind map and its laws, and the relevance benefits of Mind Mapping technique in preparing and presenting a lecture. While the second chapter deals with memorization strategies , memory as a cognitive process , types of memory ,definition of memorization and listing some memorization strategies.

Finally, the third part is the third chapter which represents the field work. It includes data collection, data analysis and findings of the teachers and students' questionnaires. At the end of this chapter we will suggest some recommendations and pedagogical implications.

Chapter One

Mind Mapping Technique

Mind Mapping Technique

Introduction

Knowing how to learn and how the learning machine is work are most important steps to start learning. This chapter presents the brain by introducing the structure of the brain and the function of its parts; also, the chapter provides an overview to the technique of Mind Mapping.

An Overview about the brain

The nervous system is one of the human body organs, contains a group of cells, contributes to the body affected by surrounding the environmental conditions, temperature, and pain, and has an important role in many of the processes that occur within the body: organization breathing, heartbeat, through send commands to the brain performs. The brain is the human user it is responsible for the nervous system in the human body, which weigh up to a kilo in the body of an adult, and is worth mentioning that this weight, constitute 2% of the total weight of the human body, and that the brain contains a large percentage beyond imagination of the fibres and nerve cells, which are known as the (white matter), and that the brain is characterized by being comprised of a large group of synapses that connect with each other nerve cells. The brain contains billions of nerve cells, and the sections are mixed, accurate and complex (Hudmon, 2006).

The brain lobes and hemispheres

The human brain contains four major lobes: anterior and posterior lobe, the temporal lobe, and the parietal lobe, and what distinguishes these lobes, is fully in the performance of bodily functions unilateral, each lobe plays an independent role for another. It has an important functional role of the human body, each clove cloves major brain responsible for a lot of functions that help the body to be based full activities today. The right hemisphere controls the intellectual areas such as: rhythm, spatial, awareness,

colours, dimensions, and making sense of the abstract; whereas, the left hemisphere was assigned to the following intellectual activities: logic, words, numbers, linearity, and analysis (Rogers, 2011).

Concept of the brain

The Brain is the most complex organ in the human body. It produces our ideas, actions, memory and feelings. This term is developed and defined by many of researchers and scholars.

According to Marliee (1999,p.1) views the brain is a fascinating organ like the rest of the body, in other words, it is capable of attracting and attention , it is the most regular organ in human . The Brain cells are different from other cells which are divided into two types of the Cells: Neurons and Glial cells. Marilee mentioned that before birth the Brain produces about 250, 00 neurons per minute whereas at birth, humans have 100 billion neurons. Also, Buzan (2006,p.16) states that Brain is "super-powered processor capable of boundless thoughts and radiant thinking", he means that the brain collects information on the external and internal environment of the body, and analyze and process this information and other new production sent to members of the body to respond to the surrounding environment and connects associations together**.** The Oxford dictionary defines it as the organ of soft nervous tissue contained in the skull of vertebrates; functioning as the coordinating center of sensation and intellectual and nervous activity.

Harrison & Hobbs (2010, p.14) state that the brain can be divided into two hemispheres: the left and the right which are linked by a central processing unit called the corpus callosum. Each half is split into four more compartments: at the very back is the occipital lobe which handles the visual sense. At the top of the brain are the parietal lobes which help with tasks such as calculation and spelling, and they handle sensations such as touch, body awareness, pain and pressure. Just behind each ear there are the temporal lobes,

which are involved in the organization of sound, memory, speech and emotional responses. Behind the forehead there are the frontal lobes, which are considered the home of our personality; the uppermost part of the frontal lobes is involved in solving problems, activating spontaneous responses, retrieving memories and applying judgments. It also modulates our social and sexual behaviour.

Radrigues (2007) assumes that the Brain is the most complex organ in the body, encased by the skull and formed by the cerebrum, cerebellum and brain stem. It means that the brain is a protected and a complex organ in the human body. The Cerebrum play a vital role in the brain, nerves and blood vessels to support and protect them from damage, and the movement of the bones by the muscles that connect to the head include facial expressions, speech, and movement of the head. Also, the cerebrum protects the organs of sense, which is responsible for hearing, vision, balance, smell, taste, and a point of contact on the head and neck muscles are located on the outer surfaces of the skull, which is very important because it is responsible for the movement, such as speech and chewing and facial expressions.

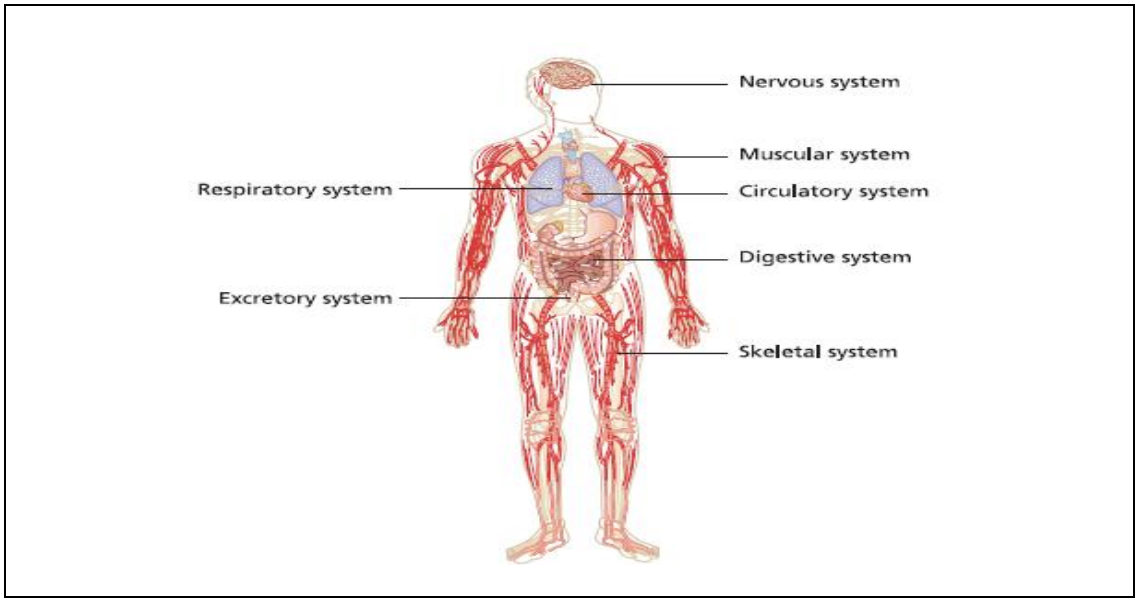


Figure 1*:* The peripheral nervous system

Peripheral nervous system works on the transfer of messages and signals between the central nervous system and the various members of the body.

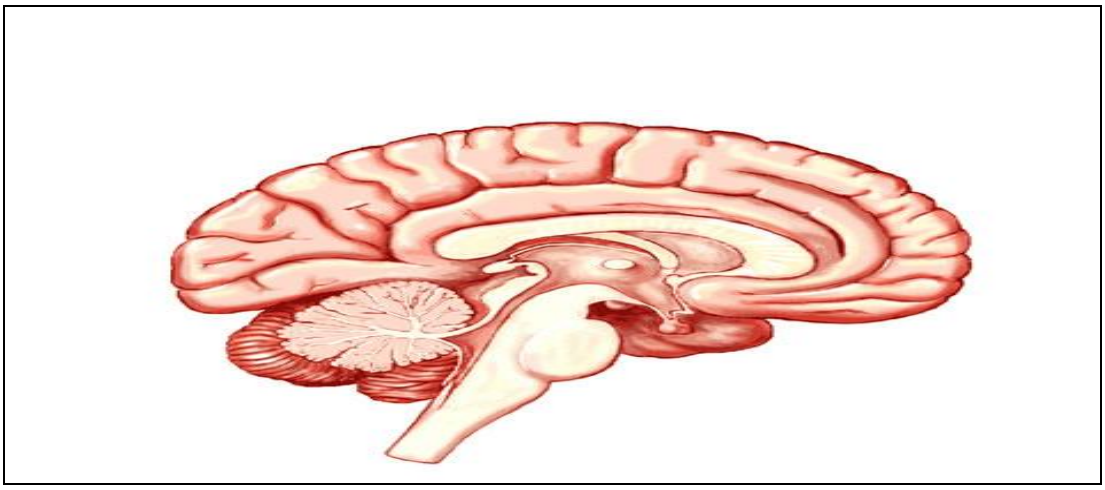


Figure 2: The human brain

Brain functions as a primary receiver, organizer, and distributor of information for the body.

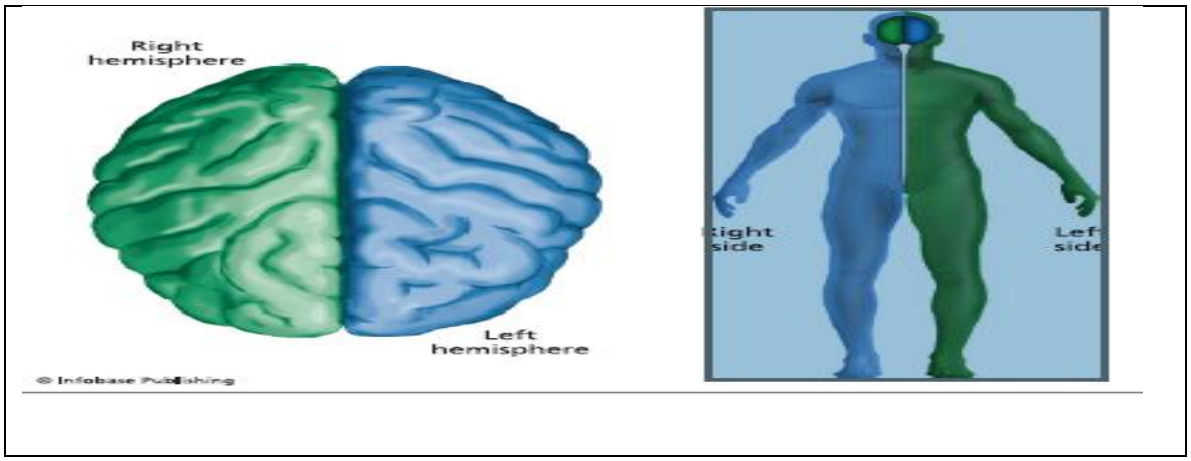


Figure 3: The two hemispheres of the brain

The right hemisphere of the brain controls muscles on the left side of the body, while the left hemisphere of the brain controls muscles on the right side of the body.

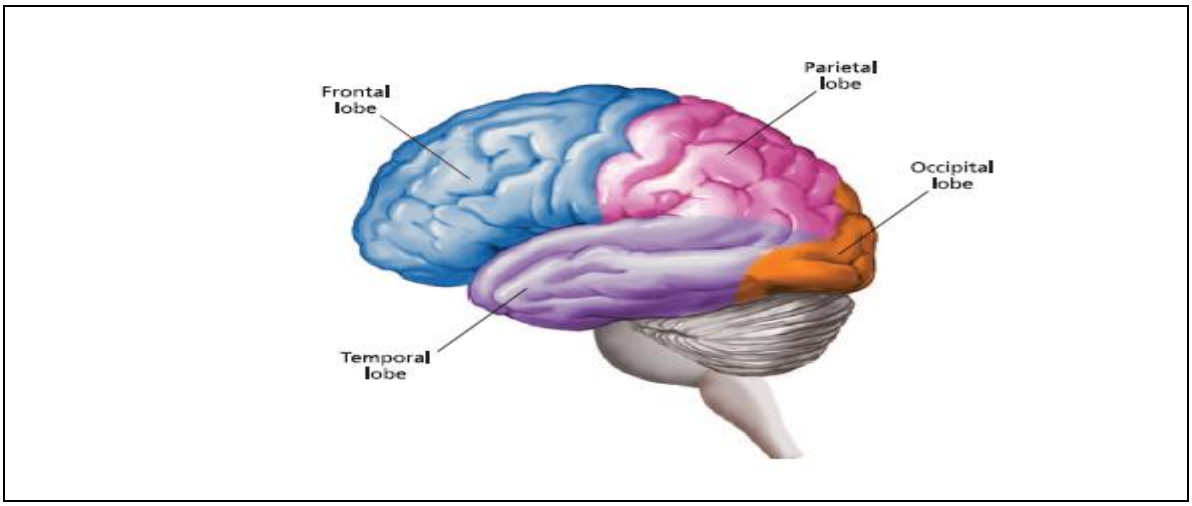


Figure 4*:* The brain lobes

Each hemisphere of the brain consists of four separate sections known as lobes.

The Language of the brain

Human Brain language is either spoken nor the written words. Buzan sees that brain works by using their senses and thus creating association between images, colors key words and key ideas. Language processors in the brain do linguistic notations to speak, understand, read and write fast, accurate and very wonderful way, i.e., when we speak the words we choose, according to believe that we will pass on the sense in which we mean the listener or the recipient. Keep the votes for each word. And build a structure grammatically linking words to each other, as well as build melodic limits for the delivery or transfer of construction grammar. All this information is translated into movement of the mouth and jaw, tongue, palate and throat. Also, imagination and association are connected to whole brain activity. The imagination is stimulated mainly when you use: senses, exaggeration, rhythm and movement, color, laughter, pictures and images; while the association is stimulated mainly when you use: number, words, symbols, order, patterns, and images. The mind map uses all of these. (Buzan, 2006, p.25).

Another thing about the brain is that it thinks and remembers in images unlike what most people believe that the brain thinks linguistically. For example: a flower, you will directly imagine a picture of a flower with a certain colour and shape.

Radiant thinking

The Brain does not think on linguistic or linear way. It is to look at the familiar in an unusual way. It is a thought process-oriented in order to use a range of techniques and mental function to reach that goal, which could be the development of existing or the development of a method or way of non-existent mode. Methods to describe and enhance this kind of creative thought can be grouped under the term "radiant thinking." Radiant Thinking from the word ‘to radiate’ meaning to spread or move in directions from a given centre; this refers to the associative thought processes that proceed from or connect to a central point. In the brain, thoughts radiate outward from a key word like the branches of a tree or the blood vessels that emanate from the heart. (Buzan, 2002 , p.32).

Figure 5: The radiant thinking

Introduction to the Mind Maps

This section gives an overview on Mind Maps through knowing about the founder, giving a definition to the concept and getting acquainted with the benefits of Mind Mapping.

The founder

The British inventor "Tony Buzan," better has known as the memory Professor he born in 1942. Tony Buzan has a busy and very distinct writings record in the memory field. Also, he developed the concept of Mind Maps and there is a variety and multiple for the development of the invention and methods to enhance memory. These maps formed a leader in this area of scientific over five hundred years". In addition, he gave an infinite number of compositions considered as a top lists of best-selling books in more than 130 countries not only that, but were deployed around 30 diverse languages. He established the memory competitions and considered as one of most important competitions in the world.

What is a Mind Map?

Mind map is a way for expressing personal views and related schemes, various ideas. Mental map is a way of remembering and learning based on the work of the summary of study of the substance or of the action plan, or to implement any order in the form of drawings by using a pen and paper; so gathered all the data, requirements and outputs in a single sheet.

Tony Buzan, the founder of the Mind Map technique, defines the Mind Map as a dynamic and exciting tool to help all thinking and planning becomes a smarter and faster Activity. This technique is an effective way to enhance creativity it enables everyone in different professional life as problem solving, teaching, revising, managing time and recall memories it is a great tool for summarizing information and group events that are related to each other. Mind Maps are also a great cognitive tool that can be used to arrange and

organize information when studying or presenting students with a new topic. He adds: “the Mind Map is like a Swiss army knife for the brain, anything I want to do in terms of thinking, contemplation, cognition, remembering, or creating, the mind map is the ideal tool for that.”

Mind Map is a thinking tool that reflects externally what goes on inside your head, is a key to unlocking facts, ideas and information and, also, to realizing the true potential of your amazing mind. The effectiveness of the Mind Map lies in its dynamic shape and form which resembles the shape of the brain cell; accordingly, the brain will be encouraged to work in a way that is fast, efficient, and in the style which is natural. (Buzan, 2006, p.138).

Knee (2013, p.183) states that “a Mind Map is a powerful graphic technique that provides a universal key to unlocking the potential of the brain. It harnesses the full range of cortical skill: word, image, number, logic, rhythm, colour and spatial awareness in a single, uniquely powerful manner. In so doing, it gives you the freedom to roam the infinite expanses of your brain”. Moreover, Nesbit and Adesope (2006, p.415) defined a concept map as “a type of graphic organizer that is distinguished by the use of labeled nodes denoting concepts and links denoting relationships among concepts”. Depotter and Hernacki(2004) view that the Mind Mapping is a technique to use the whole brain by using visual and other graphic to create a meaningful impression. By using the whole brain we can balance two sides of human brain: left and right brain. It means that human can maximize their brains to create meaningful things because of their brains power.

Another definition gives by Jonassen, Beissner, and Yacci (1993) they defined concept maps or Mind Maps as “representation of concept and their interrelationship that are intended to represent the knowledge structures that humans stored in their minds. It is able to be a simple work for the students who learn to understand a written text. Also, Brown (2001, p.14) defines a technique as a specific activity implemented in the classroom that were consistent with a method and therefore were in harmony with an approach as well. Mind

Mapping is a teaching technique using mind mapping as a tool to represent students' understanding by using words, picture with colour and symbols in a hierarchical or tree branch format. (Siriphanich, Panatda & Laohawiriyano, 2010,p.4).

A Mind Map is a graphic organizer in which the major categories radiate from a central idea and sub-categories are represented as branches of larger branches. It is a skill that cuts across ability levels and encompasses all subject matters. Teachers can use it to enhance learning. It is helpful for visual learners as an illustrative tool because it is a visual tool that can be used to generate ideas, take notes, organize thinking, and develop concepts (Ashman, 1993).

The Mind Map is a graphical tool for ideas and schemes it used words, images and colures in expression ideas and it rely a visual memory in Illustrate and remember the rules and instructions of the soft.

Making Mind Maps

After having an overview on the brain, it is time now to get into details about Mind Mapping. Mind Map tool kit, the five steps of Mind Mapping and the laws of this technique will explained.

The Mind Map tool kit

Everyone can have The Mind Map tool kit. It is very simple and useful. This tool kit enables the mind mapper to create an effective Mind Map. It consists of three main components: a brain, a range of multi-coloured pens in fine, medium and highlighter thickness and a paper which must be blank and unlined in order for the brain to think freely. The colour of pens is very important because colour allows the mind mapper to introduce structure. According to Buzan (2003) the tool kit consists of:

- A brain
- A range of multi-coloured pens
- Blank, unlined paper

The five steps

Making a Mind Map is simple; it requires five easy steps which are the following: First, bring a blank unlined paper and Put it in front of you. Second, in the middle of the paper, the picture is drawn and writes down one word or two to express the basic idea. It gives freedom to our mind to move in all directions, and express himself in more freely and automatic way. The picture summarizes and represents the main subject, and it should contain at least three colours. Three, the Mind mapper would draw some thick curved starts from the central picture to different directions; each line represents a main idea in the subject, these branches are considered the central branches of the Mind Map. The use of lines will be more comfortable to the eye. Four, the Mind mapper will name each of these ideas represented by the branches. Words are underlined throughout a Mind Map; this is because they are key words, and the underlining, as in normal notes, shows the importance of these words. Five, from each of these ideas, other connected lines can be drawn. The final picture looks like the tree (Buzan, 2003). These steps are summarized in an example below:

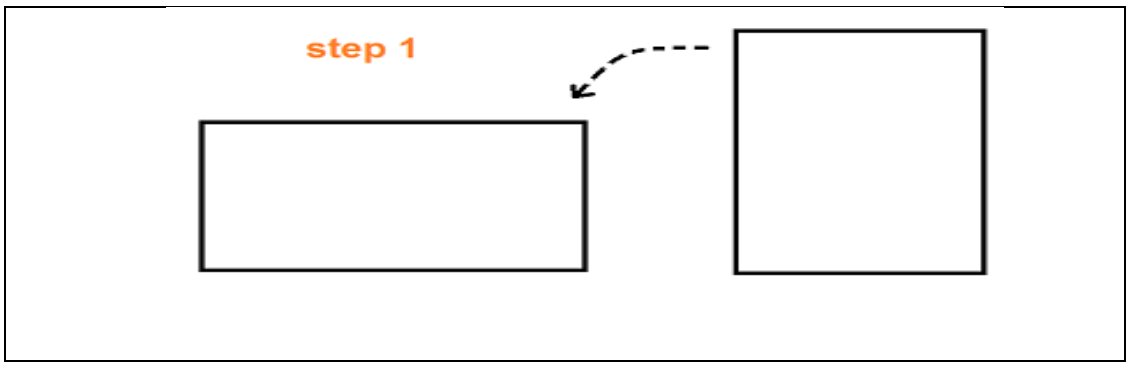


Figure 6*:* The first step

Turn the paper to gain space and to be freer while drawing the Mind Map.

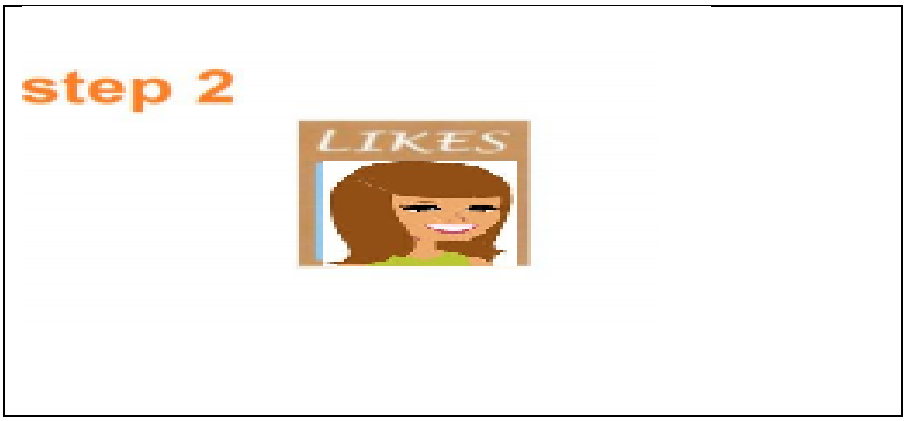


Figure 7: The second step

Make a Central Image with at least three colours

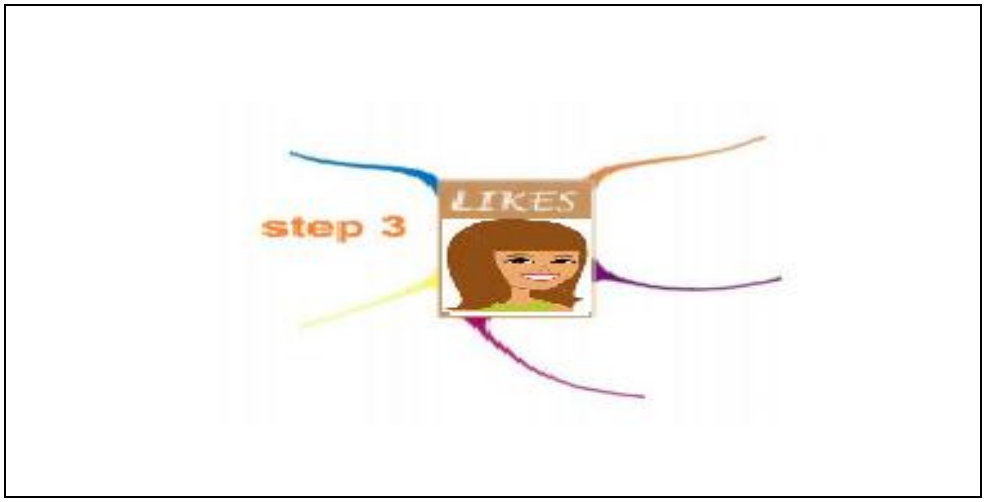


Figure 8: The third step

Add the Main Branches.

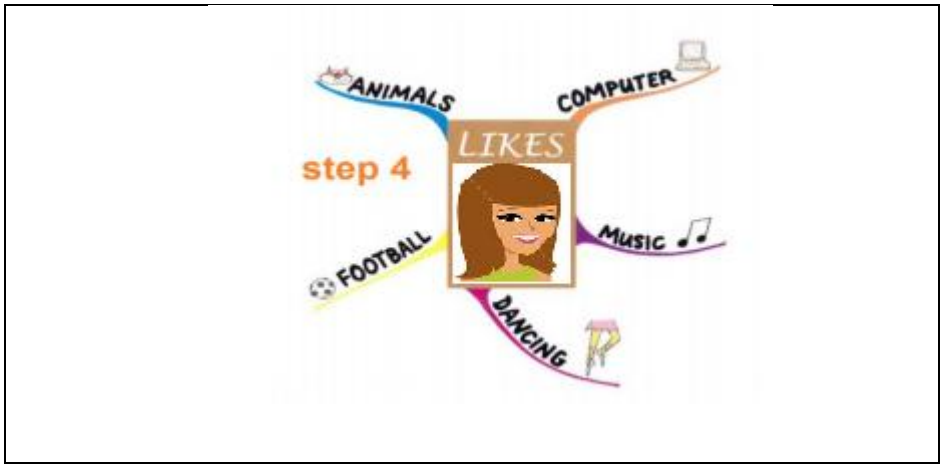


Figure 9: The fourth step

Naming the Main Branches, and Adding Pictures Where Possible.

Figure 10*:* The fifth step

The Mind Map laws

In fact, true mental freedom is the ability to create order from chaos, and the Mind Map laws will help the mind mapper to do exactly this. Buzan says:" I believe these rules are well worth following if you use mind maps for learning. They are very hard to follow completely and rigidly and it is not worth trying I have found - if you use mind maps in adult life, in your work or projects ".These laws can be summarized as follow: Use emphasis, use association and be clear.

Use emphasis

Emphasis is one of the major factors in improving memory and creativity. Emphasis is achieved by using the following items and techniques in the Mind Map (Buzan, 1994, pp. 97-100)

- **Always use central image.** An image automatically focuses the eye and the brain, and it triggers numerous associations between ideas, and it is an astoundingly effective memory aid. Furthermore; if a word, rather than a picture, is used as a

central image, it can be made more three-dimensional by the addition of shade, multiple colours or attractive lettering

- **Use three or more colours per central image**. Colours stimulate memory and creativity, and they add life to images and make them more attractive. Colours wake up the brain; this is in contrast to monochrome (one-colour) images, which the brain sees as monotonous, and which send it to sleep.
- **Use dimensions in images and words.** Dimension will help things to stand out, and whatever stands out is more easily remembered. Thus, the most important elements in the Mind Map can be emphasized by being drawn or written in three dimensions; and this is especially effective in giving Key Words prominence.
- **Use variation of printing, line and image.** Varying the size of printing will introduce immediately a sense of hierarchy and give a clear message regarding the relative importance of the items listed. Expanded size adds emphasis; thereby, increasing the probability of recall
- **Use organized spacing.** Organizing the look of the branches on the page increases the clarity of the Mind Map, and helps communicate the hierarchy and categorization of ideas; in addition, it makes the Mind Map easier to read, attractive to look at, and open to additions.

Use association

Association is the second half of the brain's language it is the integrating device which the brain uses to make sense of our physical experience. It can be achieved by using the following elements and techniques (Buzan, 1994, pp. 100- 101):

- **Use arrows.** Arrows suggest movement, and movement is a valuable aid to effective memory and recall. It automatically guides the eye to connect one part of a Mind Map with another, and they can be used within and across the branches.

They can be multi-headed, and varied in size, form, and dimension. They give spatial direction to one's thoughts.

- **Use colours.** Suwidan(2005) notes that The benefits of using colours are: first, the level of comprehension up to 73 percent; second, they enhance the level of learning and remembering from 55 to 78 percent; third, they increase the number of sales from 50 to 85 percent; forth, they increase the willingness to read with 80 percent.
- **Use codes.** The Mind mapper could use a range of simple codes in all your notes to represent people, projects, elements or process which frequently recur. Codes reinforce and enhance categorization and hierarchy through the simple application of colours, symbols shapes and images Codes may take the form of ticks, crosses, circles, triangles or underlining, or they can be made more elaborate; they can also be used to link source materials such as biographical reference to the Mind Map.

Be clear

Scribbled notes will hinder rather than help memory. While mind mapping, and if the printing is clear, and the structure is beautifully organized, then the whole Mind Map is more registerable. Furthermore is that clarity on the page encourages clarity of thought; a clear Mind Map will be more elegant, graceful, and pleasant to use (Buzan, 1994, pp. 101-103).

- **Print all words.** Printed letters have a more defined shape and therefore they are easier

for the brain to 'photograph' and retain; the extra time it takes to print a word is more than made for by the advantages it creates of increased speed of association and recall. Printing also encourages brevity, and both upper and lower case letters can be used to emphasize the relative importance of words on the Mind Map.

- **Print key words on lines.** The line forms a skeleton for the flesh of the word; therefore, it provides organization and neatness which improve clarity and aid recall. In order for the brain to make connections with all parts of the Mind Map, key words need to be connected to the lines; these lines are very important in the Mind Map since they connect the individual key words together.
- **Use only one key word per line.** Each individual word will conjure up many thousands of its own possible connotations and associations. Placing one word per line gives the Mind mapper maximum opportunity to make associations for each word; in addition, every word is connected to the word or image that sits alongside it on the next line. In this way, the brain is set free and it is opened up to new thoughts.
- **Make line length equal to word length.** This law makes it easier to place words near each other, thus facilitating association; furthermore, the space saved enables the mind mapper to include more information in his or her Mind Map. In addition, if words and their lines are of equal length, they will look more effective and they will connect more easily to the words and images on either side of them.
- **Connect lines to other lines and major branches to the central image.**Connecting the lines on the Mind Map will help the Mind mapper to connect the thoughts in his or her mind; those lines can be transformed into arrows, curves, loops, circles, ovals, triangles or any other shape the Mind mapper chooses.
- **Make the central lines thicker and keep them curved.** Thickening up all central lines will send the message to the Mind mapper's brain that the ideas on these lines are the most important. If the Mind mapper is uncertain which ideas are going to be the most important, he or she can thicken the lines once he or she has finished. The Mind Map should be curvilinear; therefore, the branches are always curved. And the reason is that the nature is curvilinear; also, if all the branches are straight, they are

literally rigid, similar, and therefore, boring; the brain very quickly will get unhappy with the whole bunch of rigid straight lines. But, it gets absorbed, and untried by the beauty of curvilinear.

- **Keep your paper placed horizontally in front of you.** The horizontal 'landscape' format gives the mind Mapper more freedom and space to draw the Mind Map than the vertical 'portrait' position; in addition, a horizontal Mind Map is much easier to read.
- **Keep your printing as upright as possible.** Upright printing gives the brain easier access to the thoughts expresses on the page; this law applies to as much to the angle of the line as to the printing itself; if the Mind mapper keeps the lines as close to horizontal as possible, his or her Mind Map will be much easier to read.

Benefits of Mind Mapping in preparing a lecture and in presentation

Using Mind Maps for self-analysis is very beneficial. They make future planning easier and more accurate by putting it in the context of the individual's state; also, they provide a comparatively and increasingly objective perspective on the self. In addition, by utilizing all the cortical skills, self-analysis Mind Maps give a full and realistic picture of the individual, and they act as a permanent record, thus allowing the mind mapper to gain a truer.

For preparing the lecture

One of the most powerful ways to use Mind Maps is as lecture notes. Preparing a lecture in Mind Map form is much faster than writing it out and it has the big advantage of allowing both the lecturer and the student to keep an overview of the whole subject at all times. As a frame work for lecturing, the Mind Map enables the speaker to hold a perfect balance between a spontaneously spoken and fresh talk, on the one hand, and a clear and a well-structured presentation on the other hand. Furthermore, the Mind Map allows accurate time keeping during the lecture or, if time allows changes for some reason, it will

allow the speaker to edit ‘on the move’ to adjust the talk to a greater or lesser length, as required. This editing function can also be very useful if some new information becomes available just before the lecture. A Mind Mapped lecture is easy to update from year to year without becoming messy and its mnemonic qualities mean that a brief overview before the lecture quickly brings the topic right back into focus. Since the lecturer’s own knowledge will evolve the same Mind Map, will trigger quite different lectures if used from year to year; this avoids the tedium of stale lecture notes without requiring any extra work. Accordingly, it makes the lecturing more fun and more interesting for both the lecturer and the students or audience (Buzan, 1994).

For presentation of the lecture

Presentations are becoming a vital part of business life today. Amazingly, a huge number of people are terrified of public speaking, ranking their fear of making speeches above their fear of spiders, snakes, diseases, war and even death! Fortunately, mind mapping helps overcoming this fear enabling the Mind mapper to prepare, organize and present his or her information and ideas in a clear, interesting and effective way. The benefits of Mind Maps in presentations are of utmost importance; they increase the effectiveness of the presenter and the comprehension and entertainment of the audience. Mind Maps are beneficial in many ways; first, they increase eye contact with the audience; second, they give the presenter the freedom of movement; third, they utilize a greater range of cortical skills; fourth, they increase involvement both for the speaker and the audience; fifth, they enable the presenter to adapt his or her presentation to the needs of the audience and to time it precisely, because they make it easier to alter or expand on key points; sixth, they result in a more memorable, effective, and enjoyable performance for both the speakers and the audience; finally, they give the presenter the freedom to be him or herself (Buzan,1994).

Mind Maps are also useful in this category; they can be used for planning; management, meetings, and education. Let us take management for example, in management Mind Maps increase efficiency, productivity and enjoyment. In fact, they can be used by every individual in a business or professional organization in any situation where linear notes would normally be taken.

Conclusion

The brain is an amazing organ where it able to think and remember in nonlinear way. A Mind Map is the reflection of the activity of the brain by being organized in radiant way. By using the Mind Map technique, the individual to enable to invest his intellectual capital in a much easier Also, having learnt how to make a Mind Map using the five steps, and the different guiding principles. It is recommended to practice this technique to benefit from its various advantages. As said that the whole life is just a bunch of pictures inside the brain in other word that the human brain makes images or pictures while receiving information. The next chapter speaks about the effect of Mind Map technique in a specific domain, which are memorization strategies.

Chapter Two

Memorization Strategies

Memorization Strategies

Introduction

“ Human memory is a marvelous but fallacious instrument. This is a threadbare truth known not only to psychologists but also to anyone who has paid attention to the behavior of those who surround him, or even to his own behavior. The memories which lie within us are not carved in stone; not only do they tend to become erased as the years go by, but often they change, or even grow, but incorporating extraneous features*”.* (Primo,2013, p.23).

Memory is a mysterious capacity that slips away from many theoretical attempts to fix its role in human life, but continuous effort is put forth to better understand it because it is so widely, and deeply valued by human beings (klemm,2007). Knowing how memory system is work is a first step to understand the memorization process.

What Is Memory?

Memory is a process of storing and retrieving information and experiences. Information received makes its way into our memory through our senses. The first step in restoring memory is our senses, if our senses are not working properly then there is no way we can form a memory. The memory is processed by several systems throughout the brain and stored for later use. For our memory to work correctly, the information has to be correctly through the senses. Memory is stored according to many themes. Memory is stored according to time, category, and function. There are several different levels of memory which represents individual systems within the brain (Kohn & Mason, 2001).

Tulving (1998) also considered the issue of defining memory and suggested that “Memory has to do with the after-effects of stimulation at one time that manifest themselves subsequently at a later time...” (p. 7). He went on to say that this suggestion may be too broad, but let us stick with it for the time being because it is helpful for considering implicit memory. Explicit memory occurs, by the standard definition, when people attempt to

recollect events from their past. The process is intentional, volitional. On the other hand, 'Implicit memory refers to manifestations of memory that occur in the absence of intentions to recollect' (McDermott, 2000, cited in Bowers & Marsolek, 2003, p.4).

Memory Process

Eysenck (2001) said that there are three processes associated with human memory. The first, encoding, is the process in which mental representations are created from external stimuli. As a result of encoding, some information is committed to memory (storage stage). The final stage is retrieval, where information is recaptured from memory. It is clear that all three processes are interrelated. Thomson and Tulving (1973, p.359) stated:" Only that can be retrieved that has been stored, and ... how it can be retrieved depends on how it was stored".

Eysenck (2001) also suggested that there is no structure without process. The overlapping relationship between the processes and between the processes and structure has affected how the human memory has been studied; to a large extent, it has been difficult to distinguish between performance in encoding and performance in retrieval and to study structure without involving process.

The Architecture of memory

Atkinson and Shifrrin (1968) proposed a multi-store model of memory. This model is shown diagrammatically in Figure 12. The model proposes that the human memory system contains three different types of memory store. The first is the sensory store, which holds information very briefly and is modality specific. Depending on the focus of attention the sensory store could hold information from any of the five senses. Next, there is short-term memory, a store of limited capacity which holds information for a very short period of time, and finally, a long-term store of essentially unlimited capacity, which can hold information over long periods of time, perhaps indefinitely. Eysenck (2001) determined that within the

multi-store approach, the memory stores form basic structure, and processes such as attention and rehearsal control the flow of information.

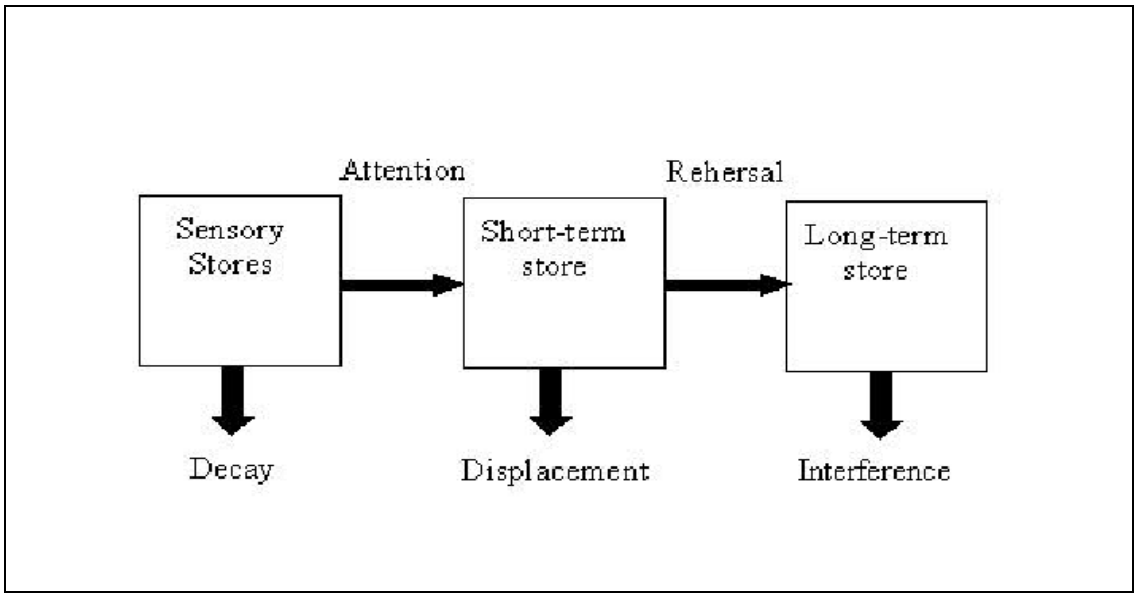


Figure 11: Atkinson & Shiffrens' multi-store model of memory (1968)

To better understand how we can retain the learned information, it is important to know how our memory works. Sprenger (2003) revealed from various sources that there are three phrases of memory, the storage phase, the retrieval phase and the learning/encoding phase. Problems sometimes happen at any of these phases such as sleep deprivation, lack of concentration, or forgetting. She goes further by explaining that there are three processes of memory, sensory memory, short-term memory, and long-term memory.

Sensory memory (SM). is where the learning styles come in. The SM is how the information is entered into our brain which is through our senses. Our senses are how we perceive the world through association of sights, sounds, touches, smells and tastes (Sprenger, 2003). The immediate memory is a process where the SM is stored in the brain, also known as conscious memory. This process lets us hold up to at least four bits of information for a short period of time. Immediate memory holds the information while new information is being added (Sprenger, 2003).

Short -term and working memory

Short-term memory (STM). Sometimes is called working memory, and when we hold new sequences of digits this can be a new telephone number, new phrases, and new names (Thompson, 2000). STM is what we are aware of in any given time. Short-term memory holds new information and also information is retrieved from long-term or permanent memory. STM has several different characteristics which are different from long-term memory. Acoustic encoding defined as words, letters and digits read or shown and the items are recalled aloud. Short-term memory can only hold very little information this is called limited capacity. Limited duration and susceptibility to forgetting are other characteristics (Terry, 2009). STM (or short-term storage; the two are often used interchangeably) refers to retention of information in a system after information has been categorized and reached consciousness (Byrne, 2008).

The STM is between the immediate and the long-term memory (Sprenger, 2003). STM is where the new and old information get together. Short-term memory usually stores the first word of a sentence so that you can understand the general idea until you get to the end. In other words it takes short-hand for you. An example of this would be if you were given a problem to solve and you had a few clues to use, the STM would hold the clues until you got more information to solve the problem. A classic example of STM usage is when students use their short-term memory to study for tests. The student will often study and take in a lot of information the night before an exam then use it for their exams the next day. This process is not recommended because the information will not be stored in their long-term memories. Sprenger further indicated that there are four factors that affect immediate memory: interest, intent, understanding and prior knowledge. If interest, understanding and prior knowledge are not there, then the intent to remember can make a difference.

Working memory (WM). Is a theoretical framework designed to account for a large range of data regarding the characteristics of human memory (Baddeley, 2002).Traditionally, WM has been conceptualized as an active memory system that is responsible for the temporary maintenance and simultaneous processing of information (Bayliss, Jarrold, Baddeley, Gunn, & Leigh, 2005). Alternatively, WM has been defined as the use of temporarily stored information in the performance of more complex cognitive tasks (Hulme & Mackenzie, 1992), or as a mental workspace for manipulating activated long-term memory representations (Stoltzfus, Hasher, & Zacks, 1996). According to Baddeley and Hitch (1974), WM consists of three components:

1) Central Executive

2) Phonological Loop

3) Visuospatial Sketchpad

In the model these components are limited in capacity and relatively independent.

The central executive is the most important component of the WM system; passing on tasks to the other components when they are required. The central executive controls attention to stimuli and allocates resources. The phonological loop stores information in an auditory form and the visuospatial sketchpad is a temporary store for visual and spatial information.

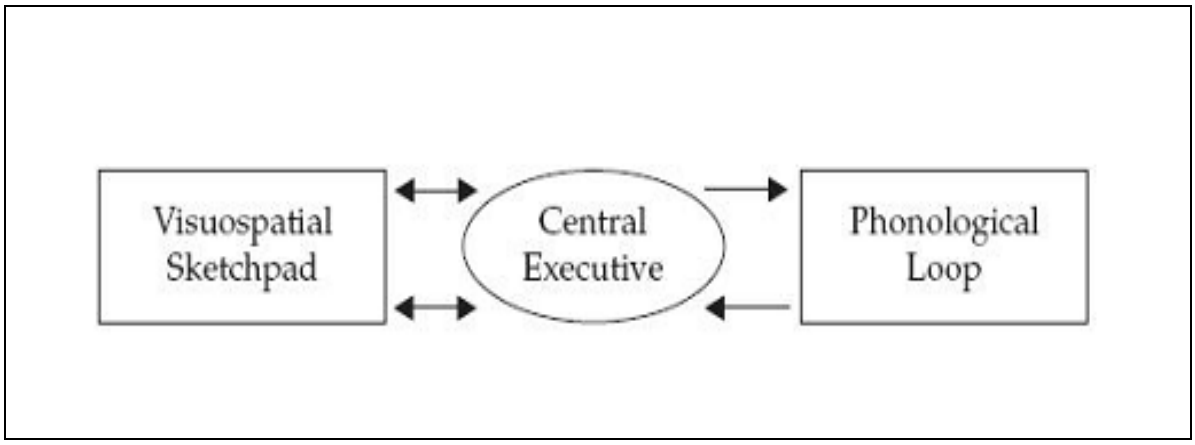


Figure 12: Baddeley and Hitchs' model of working memory (1974)

WM is able to keep the information current in our brain for short periods, and using this information for the task at hand. WM is supported by the regions of the brain called frontal and parietal lobes. WM has four. The phonological loop is compatible to verbal STM. This represents the brief storage of all verbal material, and is used in language processing, rehearsal, verbal problem-solving, and arithmetic.

The visuospatial sketchpad helps us retain visual images and spatial information. The central executive focuses or distributes the attention to all the multiple tasks. When we try to do two things at one time this is because of the ability to focus full attention on each of the tasks. Another role of central executive is to be a manager between the two memory stores. The executive coordinates the information stored in the buffers and helps in problem-solving and planning. The last part of WM is the episodic buffer, the episodic buffer integrates information through the phonological and visual stores, operations of the central executive and the information that entering and retrieving from long-term memory (Terry, 2009).

Long-term Memory (LTM)

LTM is stored and permanent information that we store in our memory to retrieve later. LTM has unlimited storage capacity it has a few subcategories, memories that we have about life events and information about our environment are stored in declarative memory. Declarative memory is a part of our LTM and where the information is stored. Semantic memory is part of declarative memory that helps store general information such as a name and certain facts. Episodic memory is a subcategory of declarative memory which all information regarding our life events are stored (Heffner, 2003). Also, Atkinson and Shiffrin, (1968) defined it as a store for holding data that is to be retained for periods longer than thirty seconds and has been suggested to be unlimited in capacity.

LTM can be separated into two types: implicit memory which is memory that occurs without a conscious effort and explicit memory which is the opposite in which it occurs with a conscious effort. Explicit memory is our memory that holds facts and events (Sprenger, 2003).

Explicit memory. Is broken down into two categories, the first is semantic. Semantic is information related for factual information (Sprenger, 2003). This information can be problematic to hold on to due to the fact that unless the information is related to something the learner can understand the information will not be retained. The second memory under explicit memory is episodic memory. Episodic memory is when we remember a place that we have been and we recall what we learned there (Sprenger, 2003).

Implicit memory. Is remembering information that is learned subconsciously (Sprenger, 2003). These memories are brought into the surface by conditional responses, emotional, and procedural memories. Conditional responses are brought about by a sound

or a phrase. Procedural memories are memories that are brought on by movement such as hand movement to help the person to recall. Emotional memories are stimulated by experiencing emotions (Sprenger, 2003). The theory of emotional memories is if the person can feel it then they will be able to remember it.

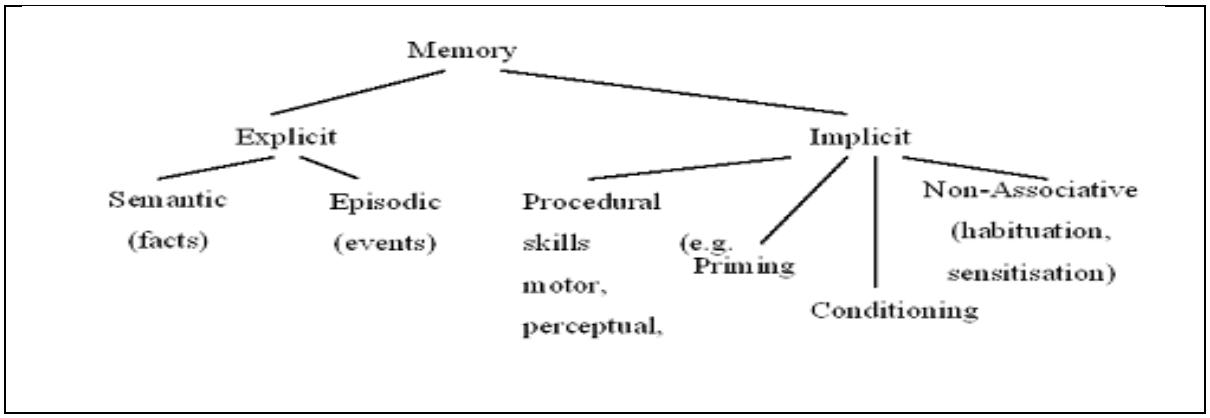


Figure 13: Classification of memory types

Memorization strategies

Definition of the term memorization. Many definitions of memorization can be found in various studies and dictionaries. For example, according to Richards, Platt, and Platt (1992, p. 226), "Memorizing is the process of establishing information in memory. The term 'memorizing' usually refers to the conscious processes." This means the learners use memorization consciously and they think about the process of memorization when they are applying it. Another explanation can be found in the Oxford Advanced Learner's Dictionary (2005) that "Memorizing is to learn something carefully so that you can remember it exactly." This technique is similar to a description of a cognitive learning strategy called rehearsal (O'Malley & Chamot, 1990).

Memorization as Rehearsal

Memorization is the cognitive process that attempts to retain learned information. It requires the repetitive use of stored information. Nevertheless, there are more ways to

retain information than simply by "rote memorization." Some strategies such as associating new information with old information already stored in long-term memory are also effective.

Memorization as a Cognitive Process

The process of memorization encompasses encoding (knowledge representation), retention (store in LTM), retrieve (LTM search), and decoding (knowledge reformation) as shown in Fig. 14. The sign of a successful memorization process in cognitive informatics is that the same information can be correctly recalled or retrieved. Therefore, memorization may need to be repeated or rehearsed for a number of cycles before it is completed.

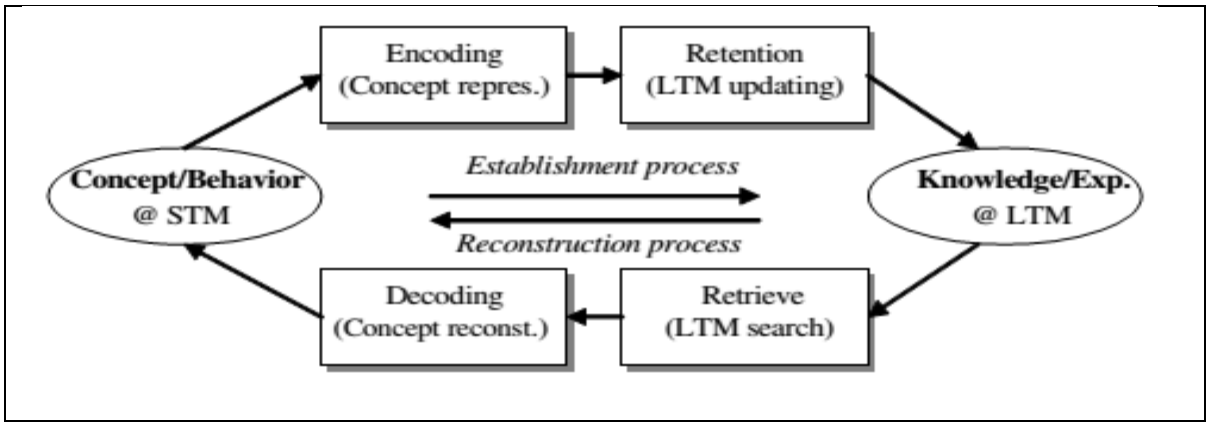


Figure 14: The process of memorization

It is noteworthy that the memorization process is a closed-loop between STM and LTM, where it may be divided into the establishment and reconstruction phases.

Memorization as a Learning Strategy

Memorization, in the most general sense, refers to a method of learning in which the individual recalls information. From a broader perspective, memorization can be defined as a strategy that focuses on the storage and retrieval of language. Though strategies such as drill and repetition might be considered the same as memorization

strategies, the storage and retrieval process are the focus of attention in the case of memorization (Wenden & Rubin, 1987, p.22).

Other kinds of learning, human memory is crucial in the acquisition of second language learning. "The ability to understand spoken and written language and to produce it in speaking and writing depends on the ability to recognize and retrieve information stored in memory" (Wenden & Rubin, 1987, p.43). In line with this, Cook (1994, p. 133) believes that repetition and learning by heart are valuable, pleasurable and efficient uses of language learning activities and can help language learners set valuable goals as they will be involved in the authentic and communicative use of language.

Specific Memorization Strategies

The strategies that mention below work at least to some degree with all kinds of memory, which currently are often characterized as procedural (motor or cognitive skills, simple conditioning), priming, working, semantic (general facts), and episodic (personal events) (Tulving, 1995). These strategies have not been systematically compared for efficacy for each category of memory, but it seems reasonable to believe that they are generally helpful (klemm, 2007, pp. 66-69).

Rehearsal . The key role of rehearsal is most obvious with rote memory, because rote memory only works when the information is repeated, often numerous times. The same effect is seen with motor learning, as practice is essential to perfect such learned actions as touch typing, piano playing, or kicking field goals. This repetition is needed to promote consolidation of WM into longer-term form. Consolidation is time-dependent (McGaugh, 2000; Shadmelu & Brashers-Krug, 1997). It takes many minutes of uninterrupted rehearsal for many things to get consolidated.

Interposing new information or stimuli while other information is in the process of consolidation may well interfere with consolidation. Think about the typical classroom environment: about 5-10 minutes before class is scheduled to end, students start getting agitated, looking around and shuffling papers. Then the bell goes off, and they rush out to visit in the hall or dash off to the next class. What do you think happens to the learning that was on their brains' scratch pad? Rehearsal strategy is something that children learn as they mature, apparently by trial and error, because many children get no specific memory training.

Younger children do not perform as well as older ones on serial recall tasks and the reason is that they fail to rehearse cumulatively the study items as they are sequentially presented. Likewise, younger children do less well in "keeping track" tasks in which items in a heterogeneous group are presented and they are asked to keep in "keeping track" tasks in which items in a heterogeneous group are presented and they are asked to keep track of "what was the last food, animal, or vehicle?". Such inabilities are conspicuous in poor learners, regardless of age. Explicit training in cumulative rehearsal improves learning by poor learners (Cole & Means, 1981).

The goal of teachers and students should be to reduce the amount of rehearsal needed to achieve consolidation. Even with good memory practices, rehearsal needs to go on every day, even if only for a few minutes. Such short-rehearsals close to the time of original learning greatly facilitate the formation of long-term memories in the most efficient way. If you learn something and don't rehearse if for a day or so, chances are you will have forgotten it and have to start over from scratch. There will be a residual "priming" effect, but it isn't worth much.

The extreme of bad rehearsal practice is to cram for tests a day or so before a test. Such an approach creates only short-term memory, and if sleep deprivation is involved, even the STM will be impaired. Most students will invariably study by cramming if the testing is structured to allow that. No teacher should be satisfied to have students learn only for the next test, yet too often testing is not based on a philosophy that learning is to be permanent.

Association. We learn best by associating the new with what we already know. Rote memory is the most inefficient kind of memory because no associations are made Associations is most effective when they are visual images. Memory theorists have a long tradition of analysis of procedural memory (for skills), episodic memory (of autobiographical events), and of semantic memory (for words). Just since the 1960s the attention been given to visual-image memory. Despite the thousands of years of anecdotal evidence that visual images profoundly facilitate memorization (Bower & Tversky, 2000). The little formal research that has been performed does confirm that pictures are remembered better than words. There is a good neurophysiologic reason why images are so effective.

The brain devotes vastly more neuronal resources to vision than to hearing. Another indicator of vision's superior capability is the fact that there are about one million nerve fibers in the nerve coming from one eye but only about 30,000 fibers coming from one ear. And the amount of neurons devoted to understanding language is one small zone not much larger than a quarter, while the whole back of the brain is devoted to vision and much of the right hemisphere is devoted to geometric and spatial relationships. Teachers like to talk. But students would probably learn more if teachers spent more time drawing.

Likewise, students should try to put more diagrams and doodles in their notes than pure text.

People who put on “memory shows,” such as the six-time World Memory Champion whose astonishing feats of memory are accomplished by making visual images of whatever they are trying to remember (O'Brien, 2000). The images work best when they are bizarre or ridiculous. Images should be based on vivid nouns, because nouns are concrete and easy to image. One effective strategy is to link images together as a story.

Cues are important to good associations. The more cues used in forming an association, the more readily the memory will be consolidated and the more access routes one will have when trying to recall. The reason is that information is distributed throughout widely scattered networks of brain circuitry, much like a fish net. Cues are like the knots in a fish net, any one of which can be used to gain access to the entire net. The situation in which learning occurs also provides cues that get imbedded with memory of the learning. Learning that occurs under the influence of alcohol, for example, is recalled best when under the influence of alcohol (Lowe, 1983). In a study where scuba divers were given a list of words to remember, either under water or on the beach, they recalled best when tested in the same place where they first learned (Godden & Baddeley, 1975). An important memory cue is spatial location where the learning occurs (Leutgeb, 2005).

Learning acquired in a classroom is recalled best when testing is conducted in that same classroom. Students would probably perform better on statemandated testing if tests were administered in the same rooms in which the material was taught.

Chunking . Because scratch pad memory is finite and limited, trying to memorize in large chunks does not work well. Extra information cannot be held on the scratch pad. A

limited capacity for WM was firmly established in classic experiments by Miller (1956). These experiments led to the commonly accepted notion that WM capacity is limited to a "magical number of seven, plus or minus two" items or chunks. (This is why local phone numbers have seven integers.) Strings of numbers typically have some built in dependencies and we now know that the capacity for truly independent items is typically only four or less items (Cowan, 2005). If information chunks exceed working memory capacity, the brain must either drop the extra items from further processing or it must over-write what was already there.

WM operates on what is on the scratch pad. Consolidation of working memory cannot occur if what is there keeps changing too fast. All chunks of learning material benefit from being linked as small steps toward a final goal. Each step is learned in the context of the ultimate purpose, and memorization builds through rehearsal as each step is linked to the next.

Organization. The first organizational step is to identify in new information the parts you already know and the parts that can be figured out. Why memorize what you can figure out? When it comes to memory, less can be more. Next, information is remembered best when it is organized by category. Abundant anecdotal reports, especially from "memory wizards" indicate that it is easier to remember items or concepts that are related and associated accordingly, because any one item can serve as a cue that helps to dredge up recall of the others. The value of categorization has been documented in studies of neural networks, which "memorize" new information by categorizing it.

Learning progresses with progressive refinement of distinctions of input patterns. The matching process compares whole patterns, not just separate features (Carpenter & Grossberg, 1988). Actually what makes the memorization of items more effective when

they are categorized is placing items together that have natural associations, such as table/chair/dinnerware/ food. Formal studies have shown that a recall list of words that have natural associations is learned better than lists of words that are not normally associated. This ability to benefit from clustering of like items is age-dependent; young children do not show the same benefit as older children (reviewed by Cole & Means, 1981).

Attention. Experienced teachers don't have to be told how important paying attention is. But most students need to be reminded. Even if a lecture or a book is boring, failure to pay attention constitutes self-punishment. Under these conditions learning may never occur or be marginal and will certainly take longer than would otherwise be necessary. Anything not learned in class may have to be learned later. Students need to be reminded that attention in class makes remembering much more efficient. Part of paying attention is to focus. And focus does not occur when students are multitasking. We their elders tend to be impressed by the ability of today's youth to multi-task: they can simultaneously talk on the cell phone, browse the internet, IM message, play videogames, listen to their iPod, watch TV, and do their homework.

Attentiveness degrades severely with high WM load. It is hard to do two complicated things at once. But actually, multi-tasking is most likely to interfere with focused attention and, in turn, degrade memory formation and recall (de Fockert, Rees, Frith, & Lavie, 2001). Studies now confirm that multi-tasking interferes with homework (Foerde, Knowlton, & Poldrack, 2006). Nobody can do anything optimally when multi-tasking. Case in point: many states have laws against talking on a cell phone while driving. And driving a car is a lot easier than memorizing something like differential equations.

The Beneficial Effects of Memorizing

Pudwa (2005) puts forward the principle that "you can't get something out of a child's brain that isn't in there to begin with." The child learns by developing a large database in the "brain of reliably correct and sophisticated language patterns." (p. 2). Memorization can be considered as one of the techniques which can provide the child with this linguistic foundation. Young children will naturally memorize language patterns from their environment. Rather than considering rote memorization as a direct opposition to understanding, it can be viewed in a complementary role.

Adamson (1990) points to the well documented fact that "English learners use memorization in different ways, ranging from learning to coping with assignments or exercises". (p. 76). Oanh's (2006) study investigated the role of memorization and found that to some English learners memorization seems to be a normal practice. Therefore they assign a significant role to "good memorization" which helps them in learning English. Oanh (2006) states that as a way of internalizing what they have been taught, memorization is an ideal practice for English learners that leads to the natural production of the learned expressions.

Conclusion

Many students underachieve in university because they have never been formally instructed in how to memorize. They typically memorize by rote, which is the least efficient and least effective way to memorize. They also may have not been told about the many variables that adversely affect the ability to memorize, such as the way they try to memorize, their attitude and emotional state, stress, and lack of sleep. The teacher should focus on fluency in the class while the student should focus on accuracy during preparation. Memorization strategies involve more than just rote memorization. It is an

integration of cognitive and linguistic activities as well as a technique that can be nicely adapted into an EFL class setting. Teachers will be more likely to get better results if they take a little time away from telling students what to learn to tell them how to learn.

Chapter Three

Field Work

Field Work

Questionnaires' analysis and discussion

Introduction

In the two previous chapters, we have presented a general overview about Mind Mapping technique and memorization strategies. The third chapter represents the field work of this study. It comprises the analysis of the questionnaires administered to first year LMD students as well as teachers at Biskra University. All the procedures of the current study are presented including: Aim of the study methodology, population and sample, research instruments, administration and description of students and teachers' questionnaires, analysis of students and teachers questionnaires ,discussion of students and teachers' questionnaires, general conclusion, recommendations ,and pedagogical implications. Concerning chapter two , the literature review were started start by an overview of Mind Mapping just to introduce this technique to students because the aim of this study is to present the technique of Mind Mapping for students to be familiar with it and learn how to use it during their process of learning while in chapter three, both of student and teachers' questionnaires were started by memorization strategies because the organization of questions were started from general to specific i.e. memorization were considered as a strategy and Mind Mapping was presented as a technique.

Methodology

In this study a descriptive analytic method was followed in analysing the questionnaires of first year LMD students and teachers at Biskra University, to investigate the role of Mind Map technique in improving students' memorization strategies. The data gathered were measured by counting the student and teachers' answers Mind Mapping and memorization strategies. In addition, the statistical data of the study is introduced and illustrated in the form of tables and graphs to quantify all proceedings regarding the current study.

Population and Sample

Students. For our empirical part, we have randomly selected a sample of fifty students (50); in the department of foreign language at Mohamed Kheider University. These learners are first year. The reason behind choosing to work with first year is that they are studying and need to know a good technique that can helps them to learn and to memorize a lecture.

Teachers. Teachers at the University of Biskra make up the whole population. We dealt with the sample of five (05) teachers selected randomly, from the entire population of about 37 teachers. All the participants in this study are professors, doctors, and set teacher and they taught different subject at the same University**.**

Research Instruments

In investigating the role of Mind Map technique in improving students' memorization strategies, two semi-structured questionnaires were designed and administered, one for students and one for teachers. They consist of closed questions and open-ended questions.

Description of the Questionnaires

For this present study, we devised two questionnaires, one for teachers and one for students. The questionnaires contain questions of the multiple choice type, and open ended questions where the teachers/students put a tick in the corresponding boxes or give a full answer according to them after reading the questions attentively.

Teachers' Questionnaires. Teachers' Questionnaire contain of open-ended questions and multiple choices questions which divided into three sections as follows: section one: personal information (Q1). It includes general questions about the main subject/s that they taught at Biskra University and their degree. Section two: students' learning and memorization strategies (Q1-Q2). It deals with teacher points of view about memorization strategies that used by the student and we look for student ways in learning. Section three:

Mind mapping technique (Q1-Q4) Section four: teachers' attitudes towards using Mind Mapping technique in learning (Q1-Q5). After the overview about teacher attitudes and students' style in learning inside and outside the classroom, this section is composed of questions seeking information teachers' points of view about the use of Mind Mapping tool during learning.

The students' Questionnaire .The students' questionnaires were composed of fourteen questions (14) that it divided to four parts: the first part deal with personal information about the students, the second parts involves questions about students learning in the classroom and their view about memorization strategies. Part number three deals with students view about Mind Mapping and whether they used this tool during their study. Part number four deals with students' attitudes towards using Mind Mapping technique to improve their memorization strategies.

Administration of students' questionnaire. The students' questionnaire was administered to 50 randomly chosen first year LMD students out of a whole population of 558 students at Biskra University. The questionnaire was administered in a lecture session. Before answering, students were given instructions and clarifications about the importance of the current research, and how to answer the questions. Hence, we believe that the administration process was positive and properly done.

Administration of teachers' questionnaire. The teachers' questionnaire was distributed to five teachers out of 38 teachers at Biskra University. The questionnaire was handed in to teachers at the level of the faculty of letters and foreign languages and in the classrooms. They were given a period of fifteen days to answer the questionnaire. The entire selected teacher

Aim of the Study

The overall aim of this study is to investigate to what extent Mind Map technique can improve students' memorization, and show its advantages in language learning on the other.

Analysis of the Questionnaires

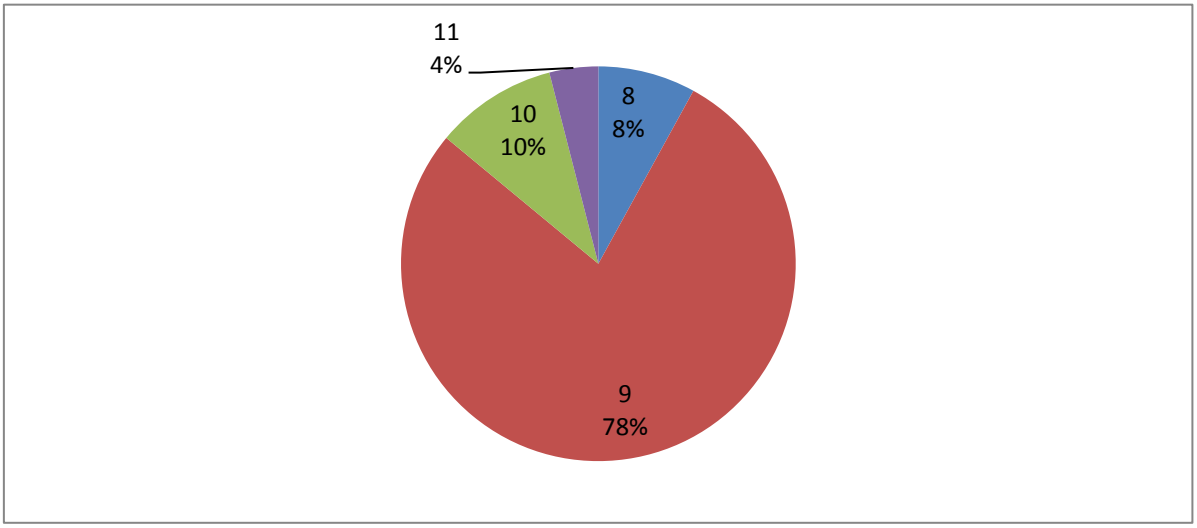
Analysis of the students' questionnaire. The answers provided by students are analyzed and illustrated as follows:

Section One: Background Information

Question number 1: How long have you been studying English?

Years	Subjects	%
8	4	8
9	39	78
10	5	10
11	2	4
Total	50	100

Table 1: Students' length of experience



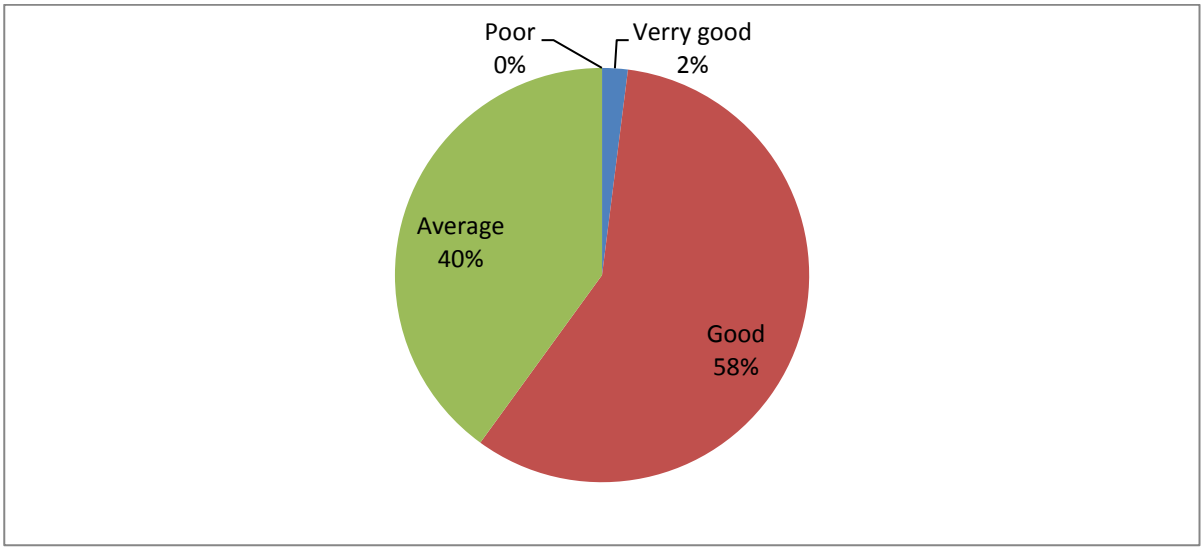
Pie chart 1: Students' length of experience

The table above indicates that the majority of the students have been studying English for nine years (78 %), whereas three students have eight years of experience (8 %).However, three students have ten years (10%) and only two students who have 11 years (4%). As a result, the majority of the students have a long period of time in studying English as demonstrated in pie chart 1.

Question number 2: How do you consider your level in English?

Options	**Subjects**	%
Very good	1	2
Good	29	58
Average	20	40
Poor	0	0
Total	50	100

Table 2: Students' self-assessment of their level



Pie chart 2: Students' self-assessment of their level

This table indicates that 29 of the students (58%) of the total population (N=50) claim to have a "good level". Only one student (2%) considers their level in English as "very

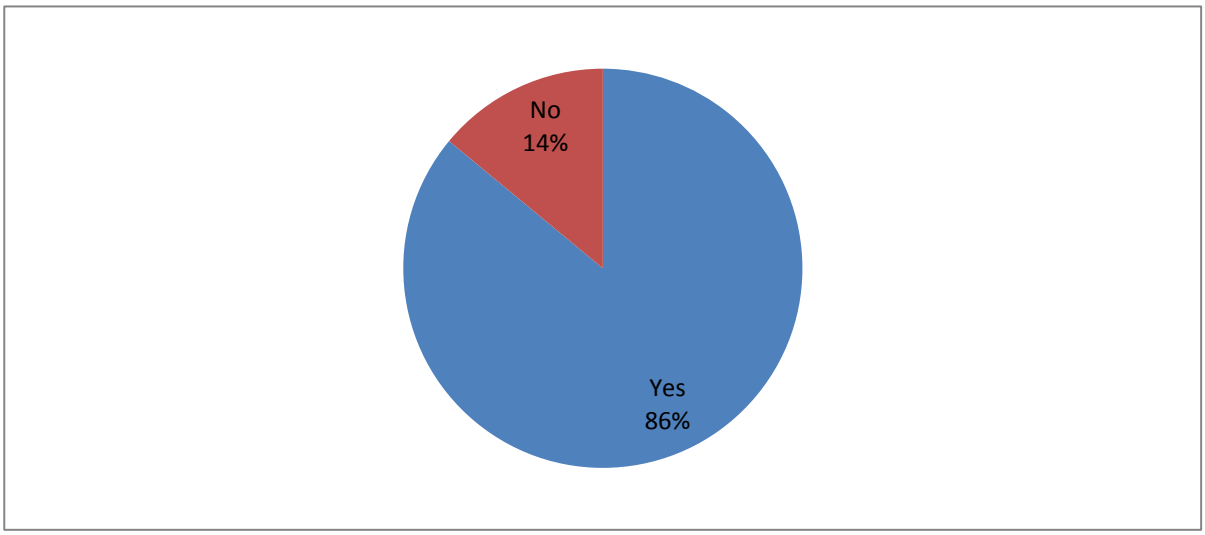
good". However, twenty students (40%) who assume that their level is "average" and no one (0%) of those who have a poor English level; this may mean that these students have factors that hinder them to increase their level. Students usually relate their level to how well or how bad they can understand and produce this language either orally or in writing (see pie chart 2).

Section Two: Memorization strategies

Question number 3: Is memorization one of your ways to learn English?

Options	**Subjects**	%
Yes	43	86
No	7	14
Total	50	100

Table 3: The use of memorization as a way to learn English



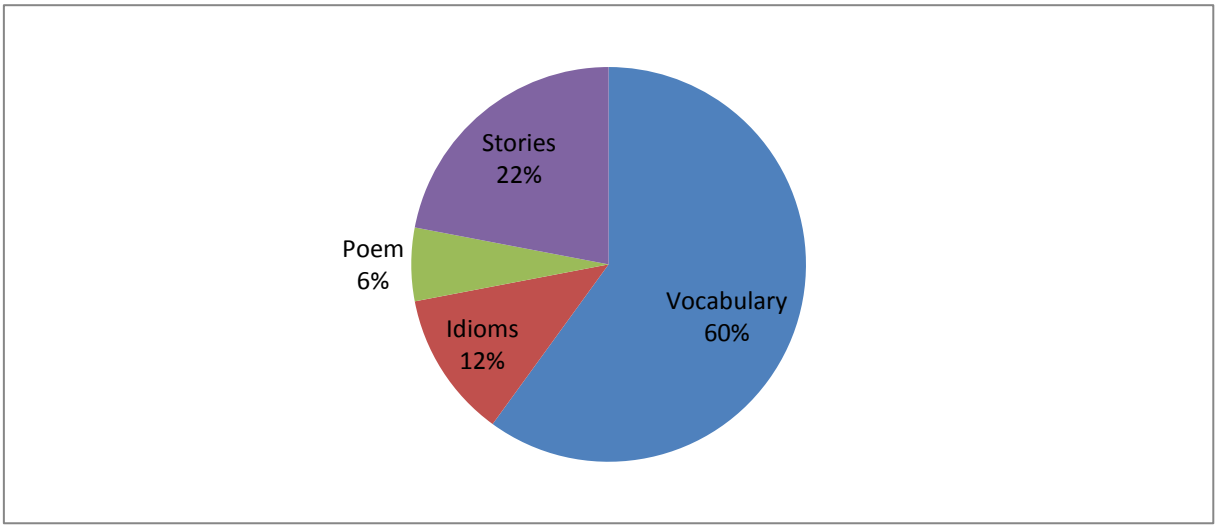
Pie chart 3: The use of memorization as a way to learn English

Forty three participants, who making up 86%, opted for "Yes" while only seven participants, i.e.(14%) opted for "No". the results show that the majority of the students at Biskra University use memorization to learn English(see pie chart 3).

Question number 4: What types of the language do you most memorize?

Options	Subjects	%
Vocabulary	30	60
Idioms	6	12
Poems	3	6
Stories	11	22
Total	50	100

Table 4: The aspect of language that the students memorize



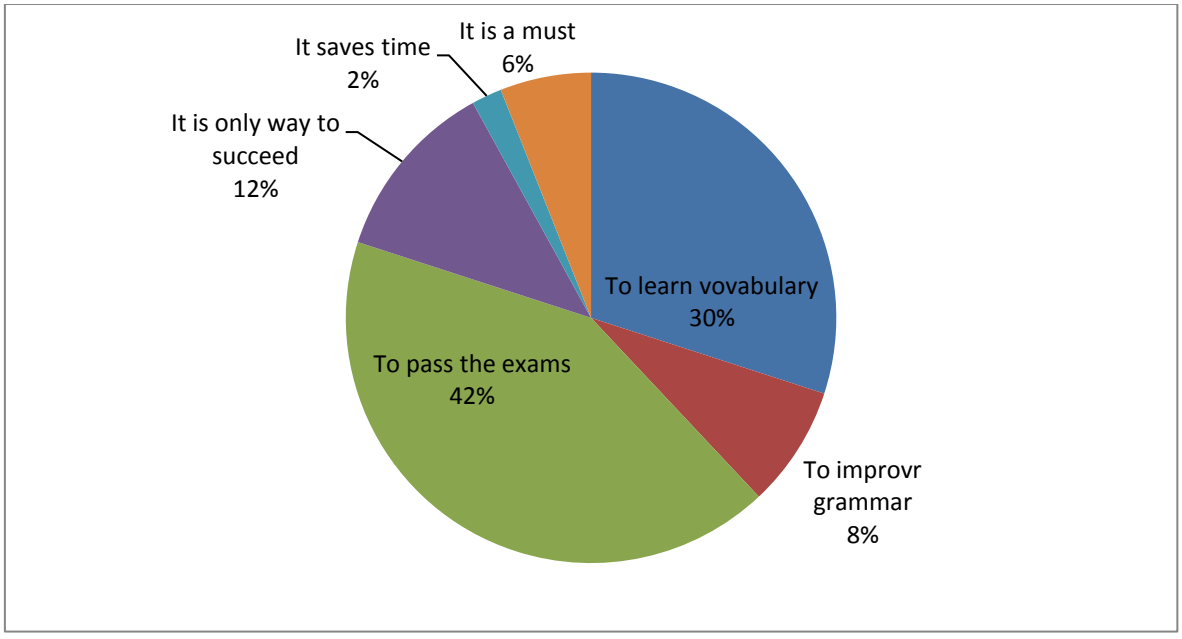
Pie chart 4: The aspect of language that the students memorize

Thirteen of students (60%) stated that they used memorization as a strategy to learn vocabulary. For idioms, poems and stories, students also acknowledged rather high use, with 12%, 6%, and 22%, respectively. For memorizing idioms the percentage was 12%, while poems received the lowest percentage (6%) of approval. However, 22% use memorization to memorize stories. Vocabulary has a short content to memorize that's why the majority choose it (see pie chart 4).

Question number 5: Why you use memorization?

Options	Subjects	%
To learn vocabulary	15	30
To improve grammar	4	8
To pass the exams	21	42
It is only way to succeed	6	12
It saves time	1	2
It is a must	3	6
Total	50	100

Table 5: Reasons of using memorization



Pie chart 5: Reasons of using memorization

Pie chart 5 shows a high percentage (42%) of students who suggested using memorization as a strategy to pass the exams. (30%) of students thought that, memorization help them to learn vocabulary and 12% of them thought they just use it as w way to succeed. However, whereas 8% of students suggested that memorizing enable them

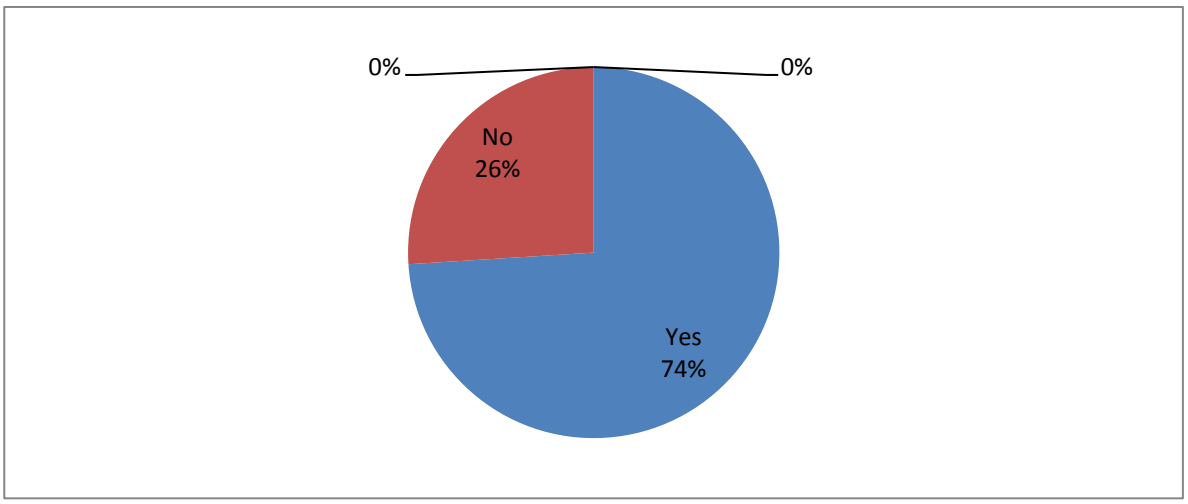
to improve grammar, only 2% of students use memorization because it saves time. In terms of using memorization as a must choice, 6% of students use this strategy as a must in learning English (see table 5).the obtained results show clearly that succeeding in exams is the main goal of using memorization by students (42%)

Section three: Mind Map technique

Question number 6: Do you think that summarizing the main points of the lecture on diagrams is better for you in order to process it perfectly?

Options	**Subjects**	%
Yes	37	74
No	13	26
Total	50	100

Table 6: Students' views in summarizing lecture on diagram



Pie chart 6: Students' views in summarizing lecture on diagrams

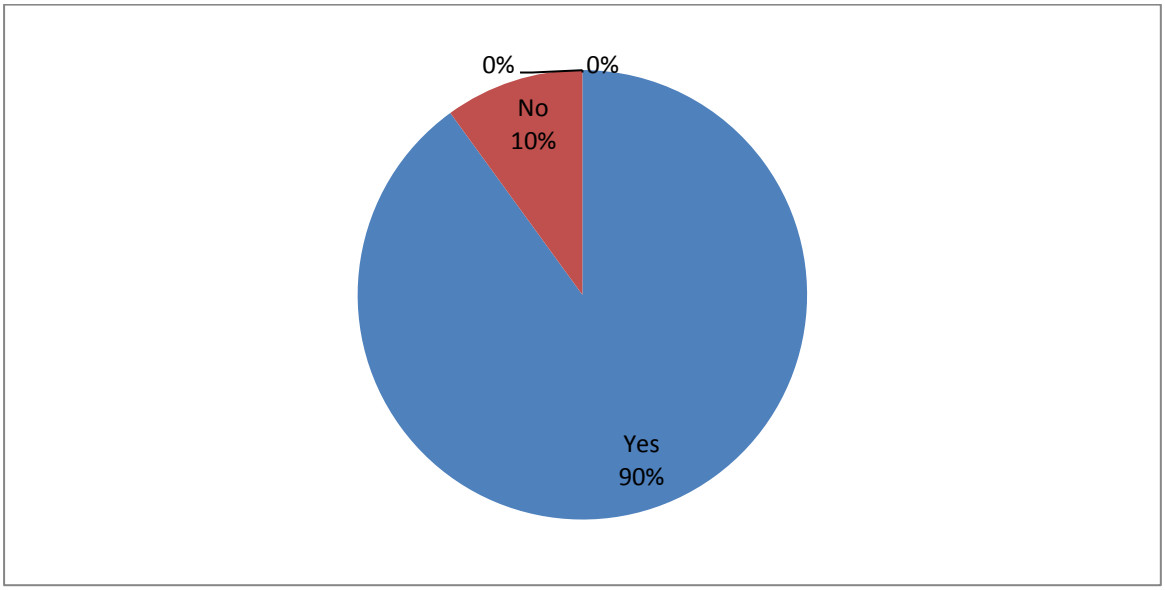
The main purpose of this question is to know whether the use of diagrams in summarizing lectures help them in order to process it perfectly or not. Thirty seven of students (74%) agrees that the use of diagrams are helping them to process the lecture while

thirteen of students (26%) answered by no. Consequently, the results reveals (see pie chart 6) that the use of diagrams to summarize lectures have an influence on students' process of lectures.

Question number 7: Have you use the Mind Map technique before?

Options	**Subjects**	%
Yes	45	90
No	5	10
Total	50	100

Table.7: Students' use of Mind Mapping



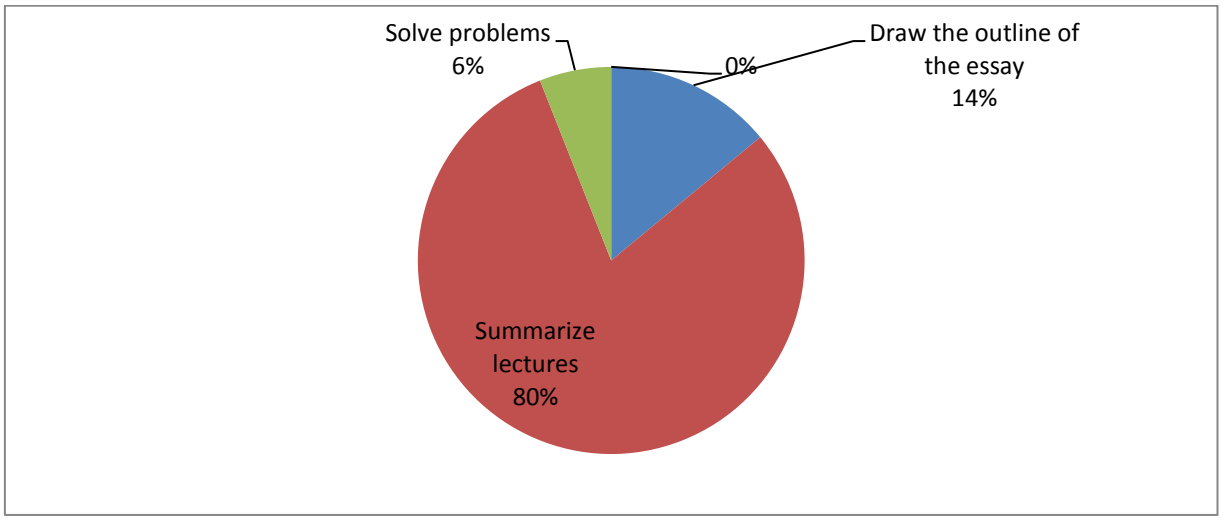
Pie chart 7: Students' use of Mind Mapping

It is visible here, the majority (90%) of the participants' uses Mind Mapping during their education, mean that they know what Mind Mapping is and they used it for different purposes which we will discover in the following part of this question. Only five students (10%) don't use it (see pie chart 7).

Part7.1: For which purpose?

Options	Subjects	%
Draw the outline of the essay	7	14
Summarize lectures	40	80
Solve problems	3	6
Total	50	100

Table 7.1: Students' purpose in the use of Mind Mapping



Pie chart 7.1: Students' purpose in the use of Mind Mapping

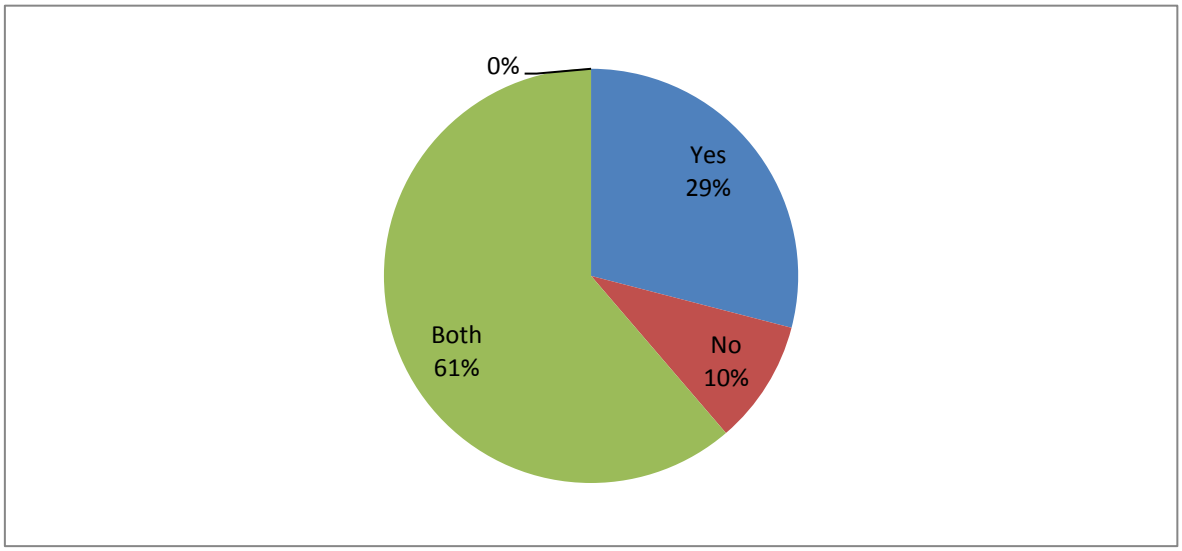
By this question, we assume that the majority of participants that they use the Mind Mapping (80%) for "summarizing lecture" i.e. the learners use Mind Mapping in order to help them revising. Seven of participants (14%) use this technique to "draw the outline of an essay". Three participants, who are making up 6%, choose the third option "solve problem" (see pie chart 7.1).

Question number 8: Does the use of colures, pictures and shapes in summarizing lecture make you more comfortable and gives you a clear image about the topic?

Options	**Subjects**	**%**

Yes	9	18
No	3	6
both	38	76
Total	50	100

Table 8: the importance of the use colors, pictures and shapes in students' Comprehension



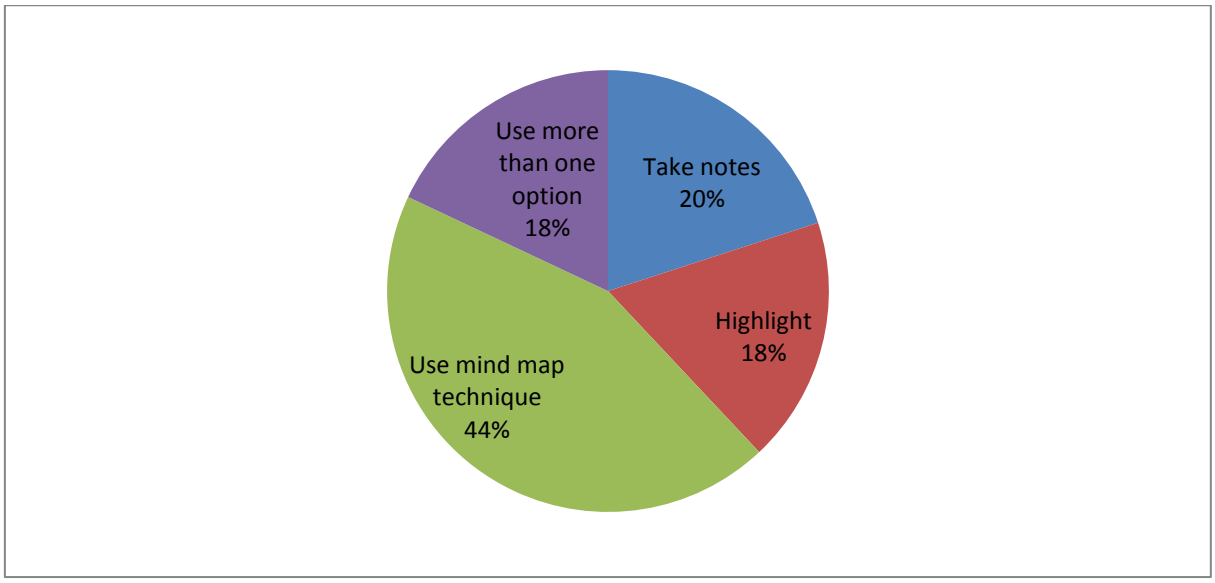
Pie chart 8: the importance of the use colors, pictures and shapes in students 'Comprehension

According to the results, thirty eight of students (76%) prefer to use colors, picture and shapes for both to make them comfortable and attractive during their education and to gives them a clear image about the topic. However, 6% of the students don't like the use of colures, pictures and shapes and they don't make them more comfortable and attractive while eight of students (18%) agree that they will be more comfortable when they use colures, pictures and shapes during summarizing lecture. Hence, the results show that using colures, pictures and shapes have great effects on students' feelings. It is illustrated in pie chart 8.

Question number 9: During the recapitulation of the lecture, you would like to:

Options	Subjects	%
Take notes	10	20
Highlight	9	18
Use Mind Map technique	22	44
Use more than one option	9	18
Total	50	100

Table 9: Students' technique in classroom



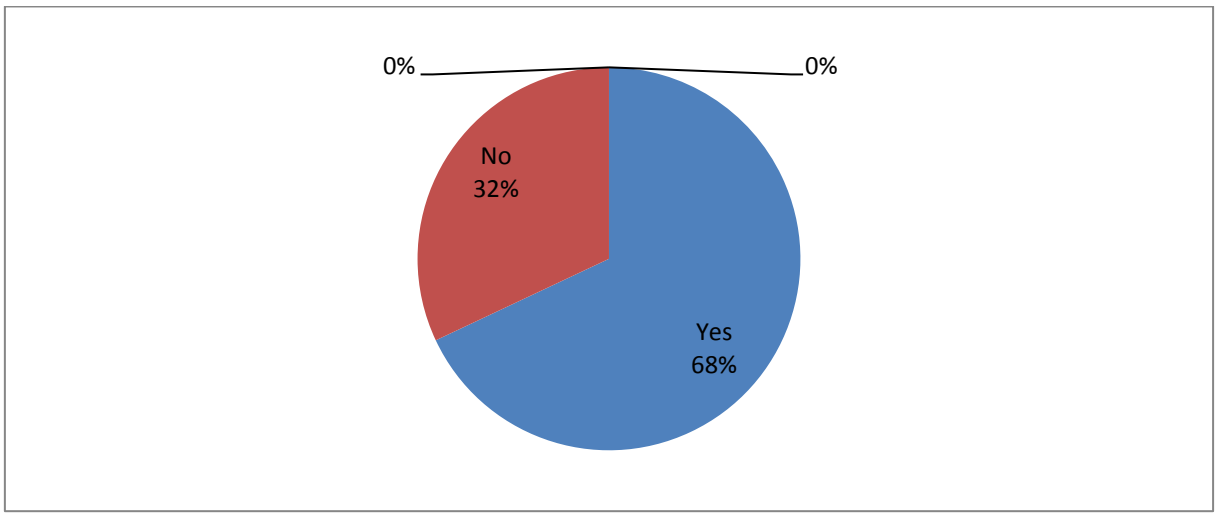
Pie chart 9: Students' technique in classroom

Twenty two of the participants (20%) take notes during the recapitulation of the lecture. Eight of students (18%) claim that they prefer to highlight while twenty two of students (44%) prefer to use the Mind Map technique. However, eight of participants (18%) prefer to use more than one option. The results show that Mind Mapping technique help students to gain time (see pie chart 9).

Question number 10: Have you ever summarized your lecture by using the mind map technique?

Options	Subjects	%
Yes	34	68
No	16	32
Total	50	100

Table 10: Students use of Mind Mapping technique in summarize lectures



Pie chart 10: Students' use of Mind Mapping technique in summarizes lectures

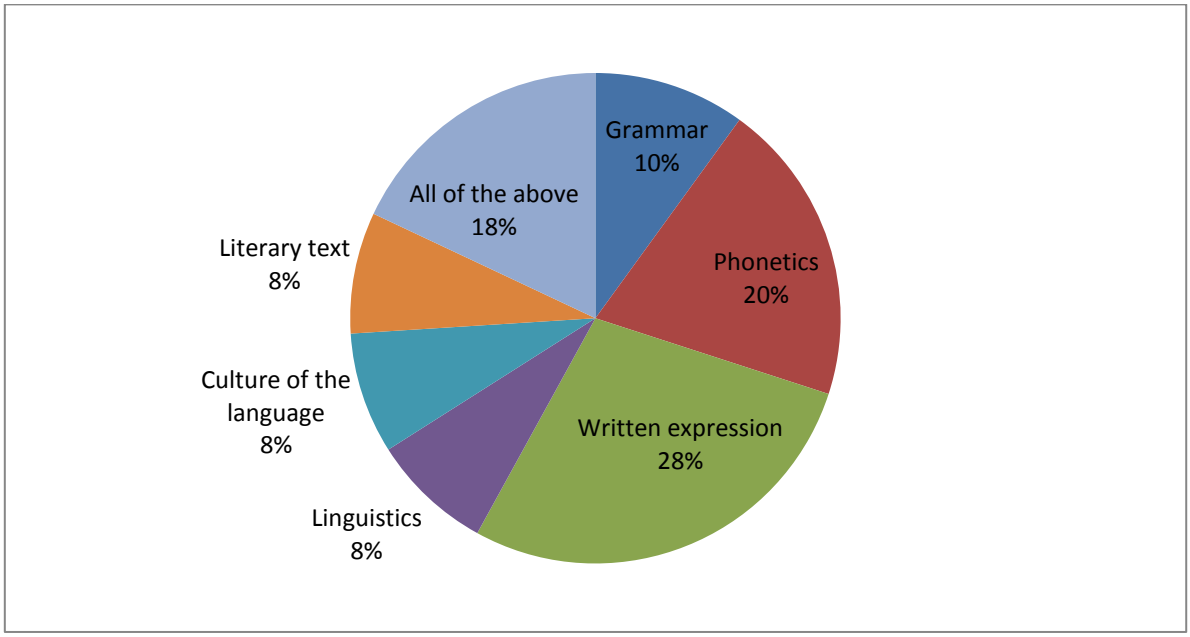
The table below shows that the majority of students (68%) summarize their lecture by using the Mind Map technique while 32% confirm that they don't use the Mind Map technique to summarize lecture. The results display the widely use of Mind Mapping by students. It illustrated in pie chart 10.

Question number 11: In which module did you use this technique?

Options	Subjects	%

Grammar	5	10
Phonetics	10	20
Written expression	14	28
Linguistics	4	8
Culture of the language	4	8
Literary text	4	8
All of the above	9	18
Total	50	100

Table 11: Modules summarized by using the Mind Map technique



Pie chart 11: Modules summarized by using the Mind Map technique

The results show that 28% of students use the technique of Mind Mapping in written expressions module while the same percentage (8%) registered in linguistics, culture of the language and literary texts. However, 10% prefer to use Mind Map technique in grammar and 18% use it in all the modules that are mentioned in the question. The

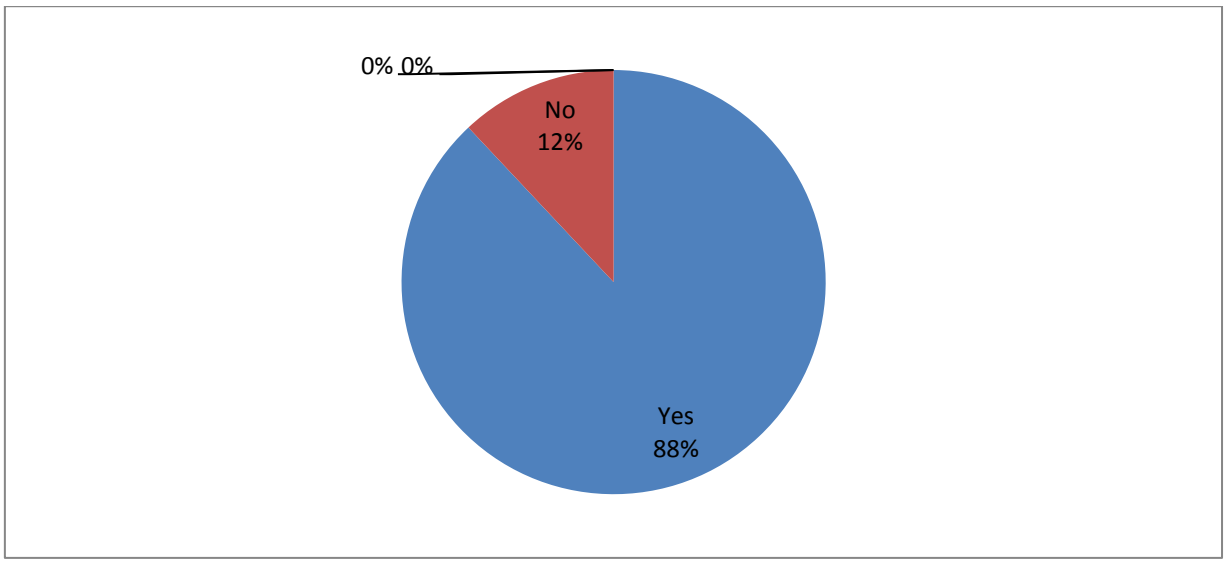
obtained results show clearly the importance of using Mind Map technique in written expression module.

Section 3: Students' attitudes towards using Mind Mapping techniques to improve their memorization strategies.

Question number 12: Does the Mind Map technique help you to retrieve information?

Options	Subjects	%
Yes	44	88
No	6	12
Total	50	100

Table 12: Using Mind Map technique to retrieve information



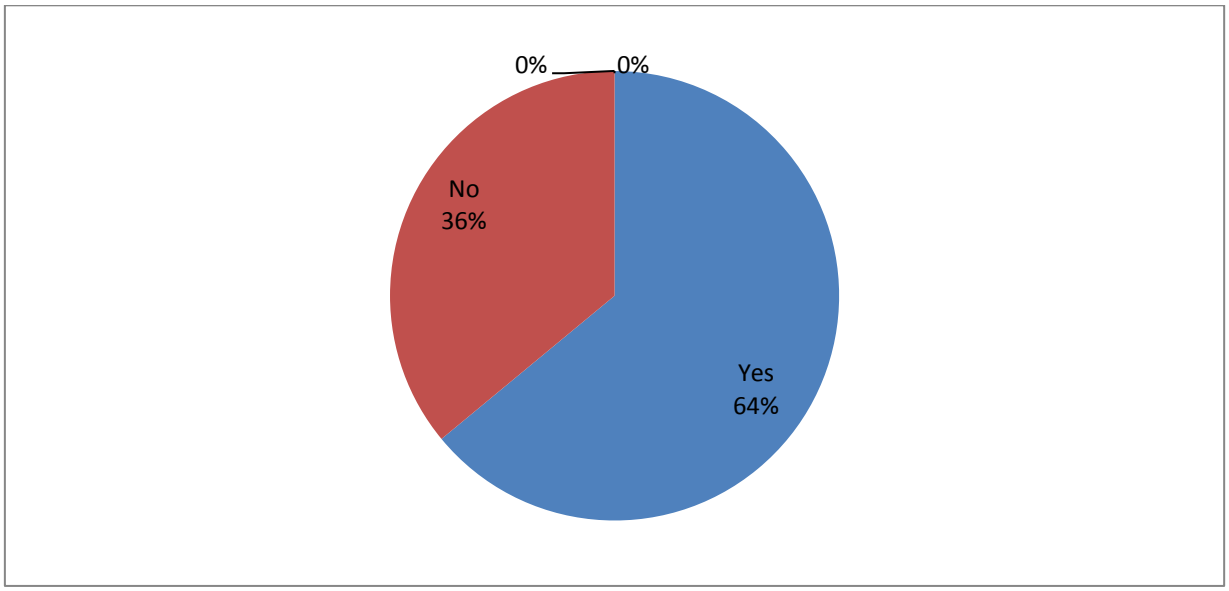
Pie chart 12: Using Mind Map technique to retrieve information

From fifteen students, forty four (88%) of students agree that the Mind Map technique help them to retrieve information while six of them (12%) don't help them to retrieve information. The obtained results show that the use of Mind Mapping related to the students' cognitive ability to retrieve information (see pie chart 12).

Question number 13: Does the use of Mind Map technique in summaries lectures help you to store information for a long time?

Options	**Subjects**	%
Yes	32	64
No	18	36
Total	50	100

Table 13 : The use of Mind Map technique to store information for a long time



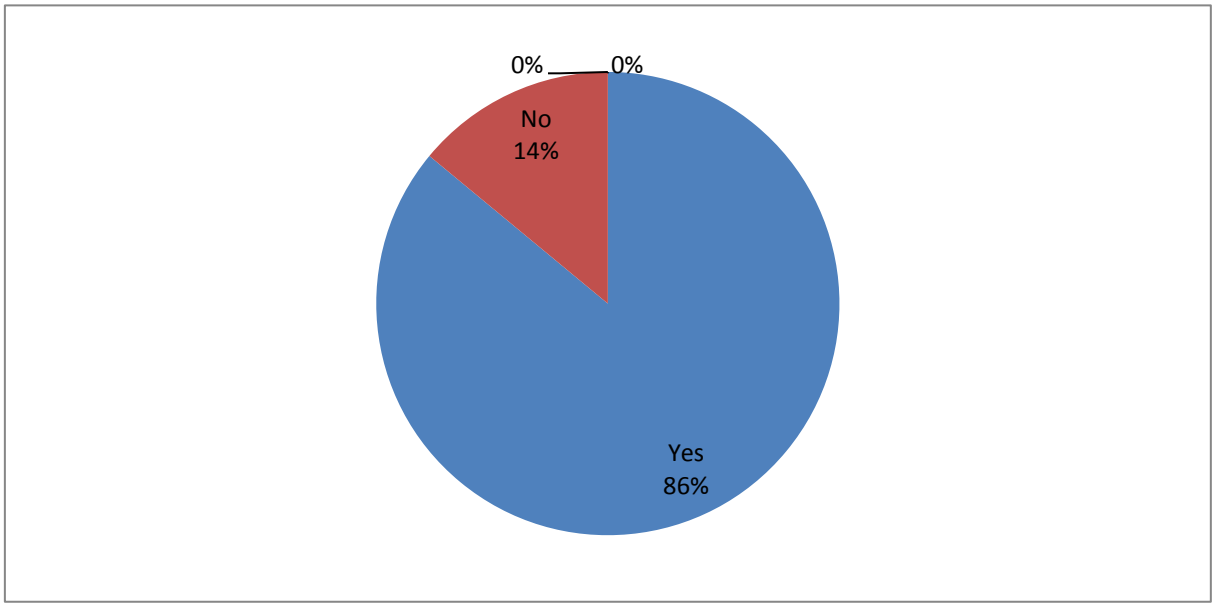
Pie chart 13 : The use of Mind Map technique to store information for a long time

From fifteen participants, thirty two(64%) belief that the use of Mind Map technique during the memorization of lectures help them to store information fo a long time while eighty students don't think that the use of Mind Map technique is helpful for storing information in a long time.consequently, the results reveals (see pie chart 13) that Mind Mapping technique is good for storing information in a long time.

Question item number 14: Do you think it is effective to use the Mind Map technique to memorize lectures?

Options	Subjects	%
Yes	43	86
No	7	14
Total	50	100

Table 14: the effectiveness of using Mind Map technique in memorizing lectures



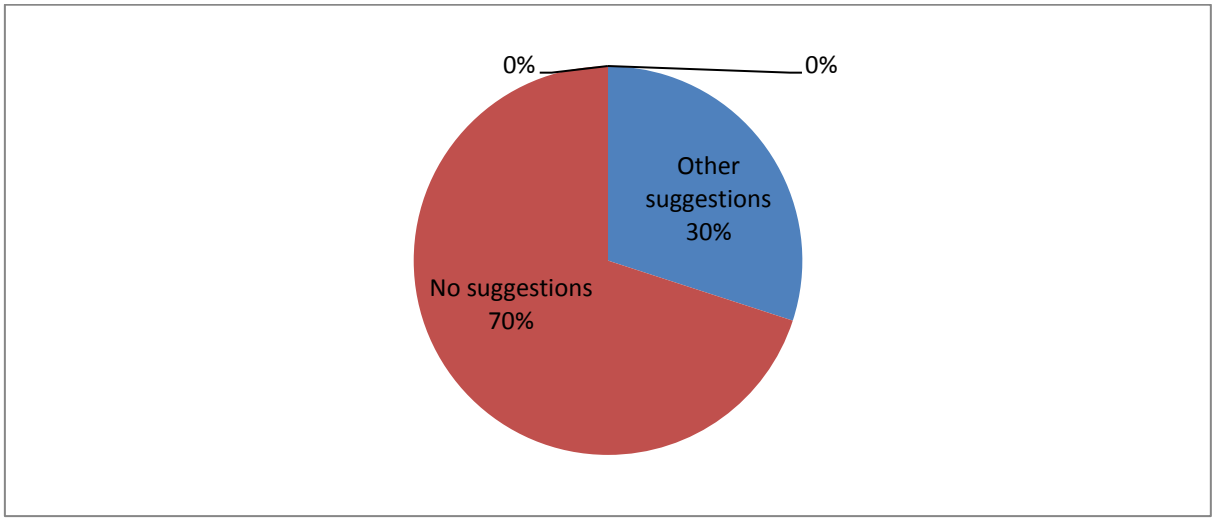
Pie chart 14: the effectiveness of using Mind Map technique in memorizing lectures

Forty three of the participants (86%) believe that the Mind Map technique is an effective technique to memorize lectures while seven of them (14%) claim that the use of this technique is not effective to memorize lectures. The results show the effectiveness of using Mind Map technique in memorizing information. It is illustrated in pie chart 14.

Question number 15: Other suggestions about using the Mind Map technique in memorizing lectures.

Options	Subjects	%
Other suggestions	15	30
No suggestions	35	70
Total	50	100

Table15: students' suggestions



Pie chart 15: students' suggestions

From 50 participants, just fifteen of them (30%) suggested some benefits of using the Mind Map technique in memorizing lectures while thirty five (70%) don't give any suggestions (see pie chart 15).

Analysis of teachers' questionnaire. The answers provided by teachers are analyzed and illustrated as follows:

Section One: Background Information

Question number 1: How long have you been teaching English?

Teacher 1: 29 years

Teacher 2: 28 years

Teacher 3: 10 years

Teacher 4: 9 years

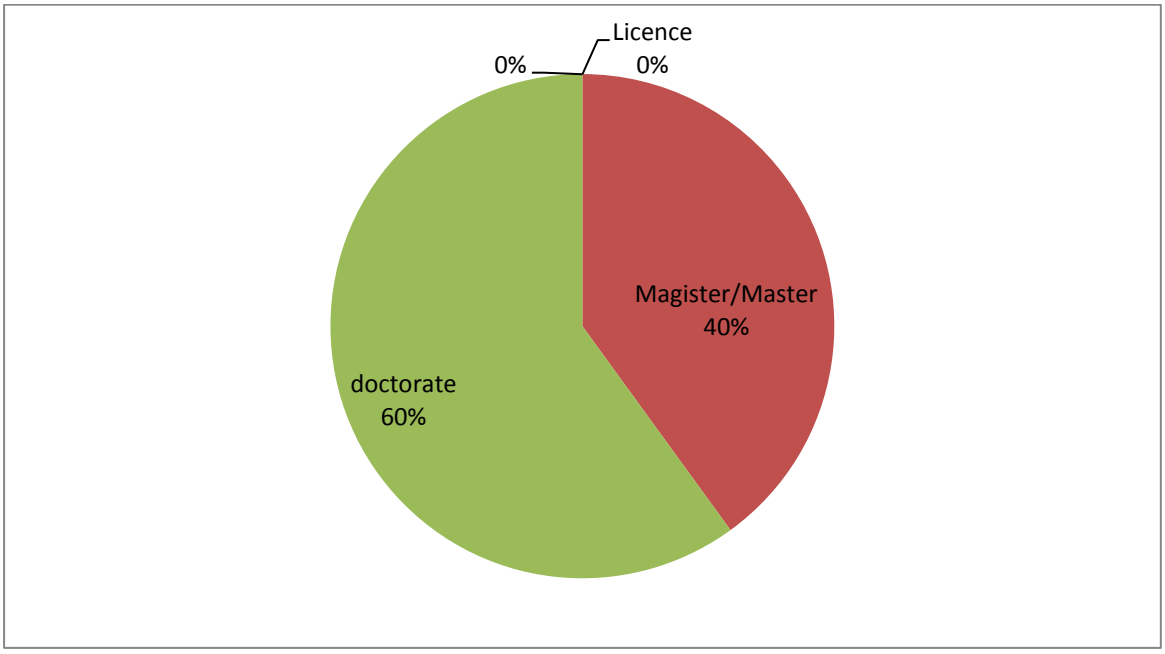
Teacher 5: 7 years

From the answers provided above, we notice that teachers have a very long experience in teaching the English language. However, only two teachers have medium experience in this field.

Question number 2: Degree(s) you have achieved

Options	Subjects	%
License	0	0
Magister/Master	2	40
Doctorate	3	60
Total	5	100

Table 16: Degree held



Pie chart 16: Degree held

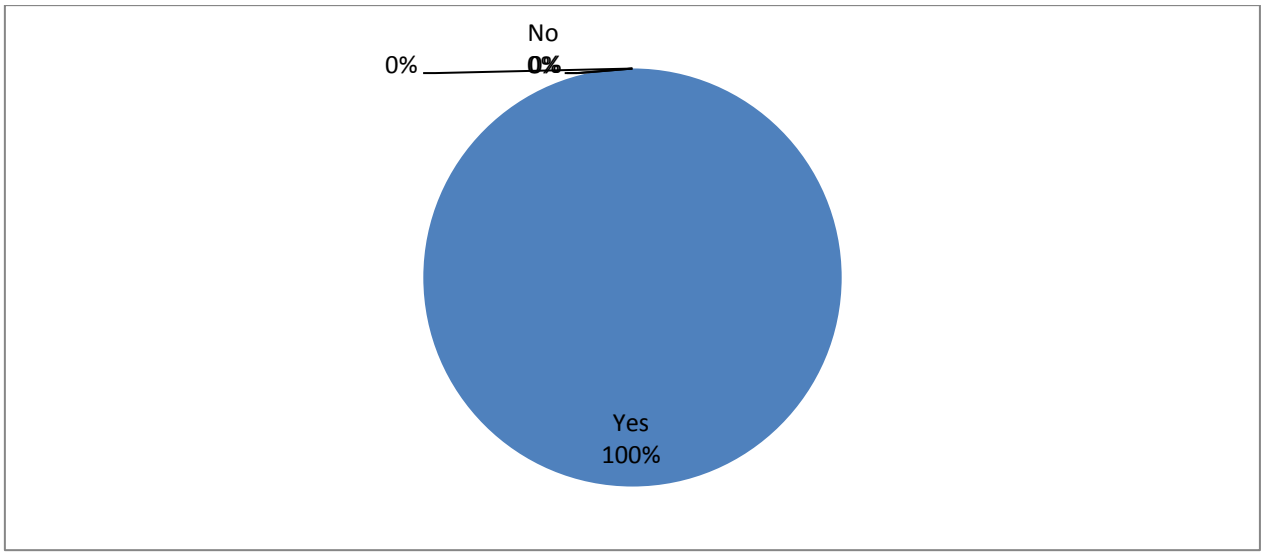
The table above indicates that the majority of teachers (60%) have the Doctorate degree, while (40%) have the Magister degree. However, none of the respondent teachers have a License degree (see pie chart 16).

Section two: memorization strategies

Question number 3: Is memorization one of the strategies you emphasize in your class to help students to learn English?

Options	**Subjects**	%
Yes	5	100
No	0	0
Total	5	100

Table 17: Memorization as a way to learn English



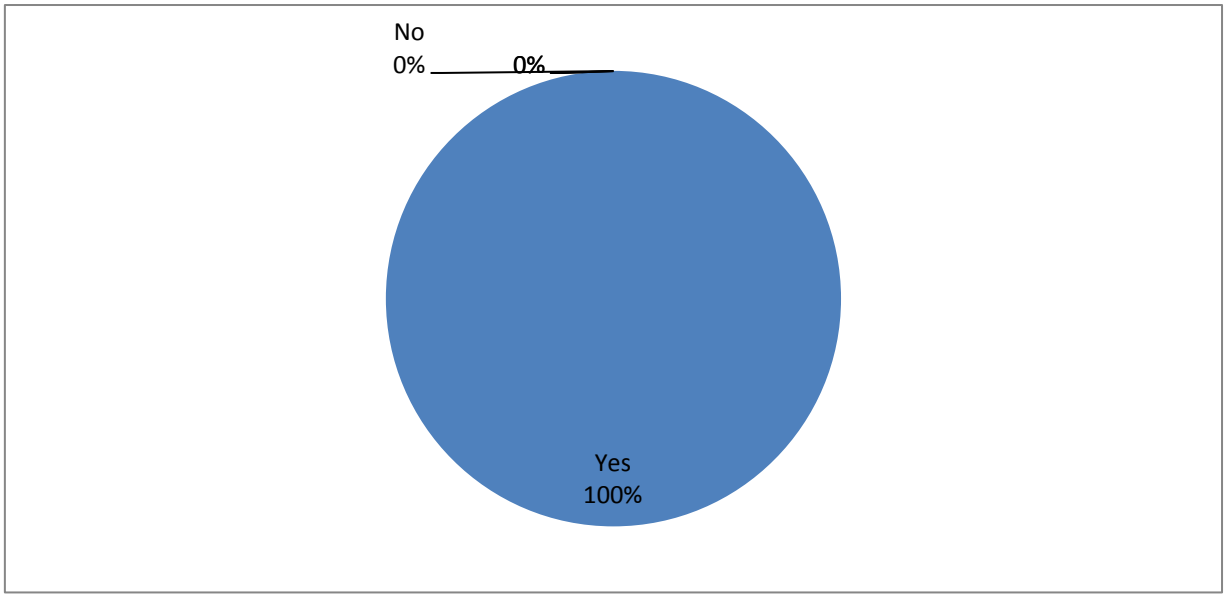
Pie chart 17: Memorization as a way to learn English

As the table reveals, all five teachers (100%) are with emphasizing of using memorization as a strategy to learn English. This clearly shows the importance of memorization for teachers.

Question number 4: As a teacher, would you advise memorization to your students?

Options	Subjects	%
Yes	5	100
No	0	0
Total	5	100

Table 18: The advising of memorization



Pie chart 18: The advising of memorization

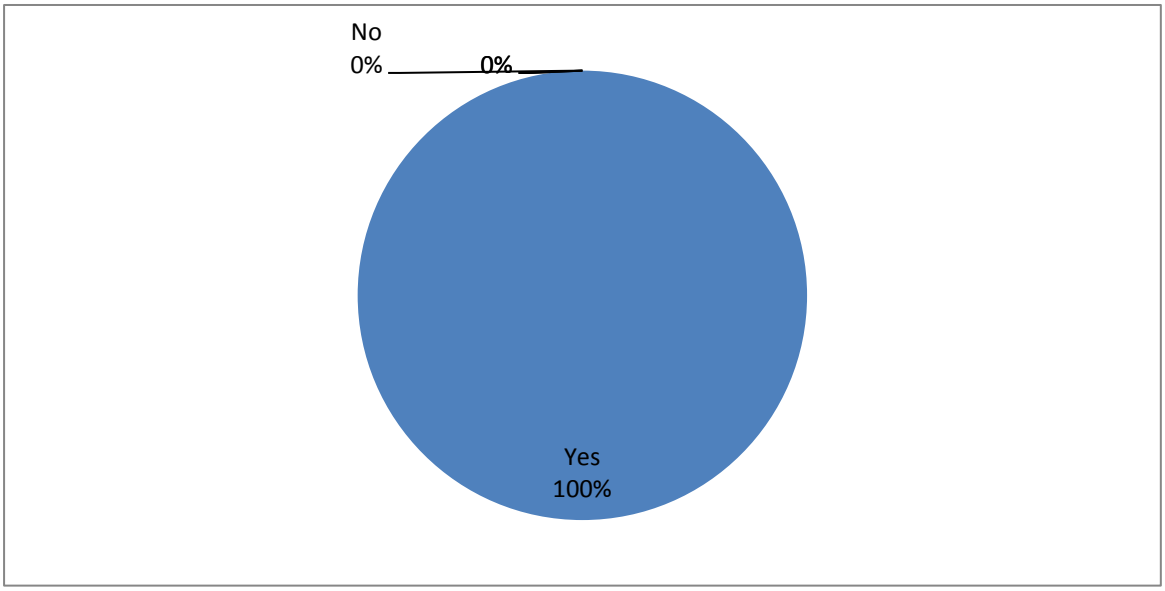
In their responses to this question, as shown in Table 18 and illustrated in pie chart 18, which seeks to find out whether teachers advise students to use memorization or not. All teachers (100%) declare that they advise them to use memorization. The results show the importance of this strategy for the students (see pie chart 18).

Section three: Mind Map technique

Question number 5: Do you have an idea about Mind Mapping technique?

Options	Subjects	%
Yes	5	100
No	0	0
Total	5	100

Table 19: Teacher' feedback about Mind Mapping



Pie chart 19: Teacher' feedback about Mind Mapping

In this question, teachers are invited to state whether they have an idea about mind mapping technique or not. According to the results reveal in Table 19 and illustrated in Pie chart 19, all five teachers respond "yes", they have an idea about Mind Mapping technique. So, Mind Mapping is well known in their glossary.

Question number 6: How can you define this technique?

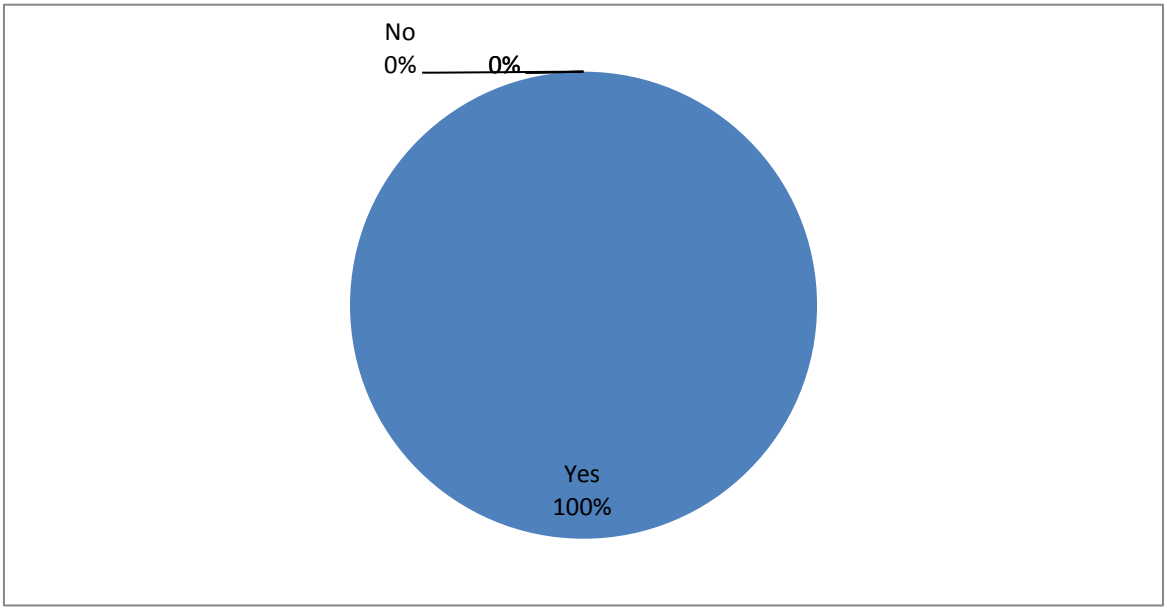
The question six is asked for the teacher to define the Mind Map technique if they have an idea about it. They give a definition about Mind Mapping. Teacher 01: define the

technique as a mental process of information. Whereas Teacher 02: define this definition as a tool that used to represent the main important points of given lecture, lesson or task. Moreover, teacher 03: knew that Mind Mapping is putting down any idea or word that comes to one's mind about define subject. Teacher 04 defines Mind Mapping as a digital technique for retrieving information. Finally, the fifth teachers also see that Mind mapping as brain friendly tool of teaching and learning that's based on colors and shapes.

Question number 7: have you used Mind Mapping in your presentation or preparing lecture before?

Options	**Subjects**	%
Yes	5	100
No	0	0
Total	5	100

Table 20: The use of Mind Mapping in presentation



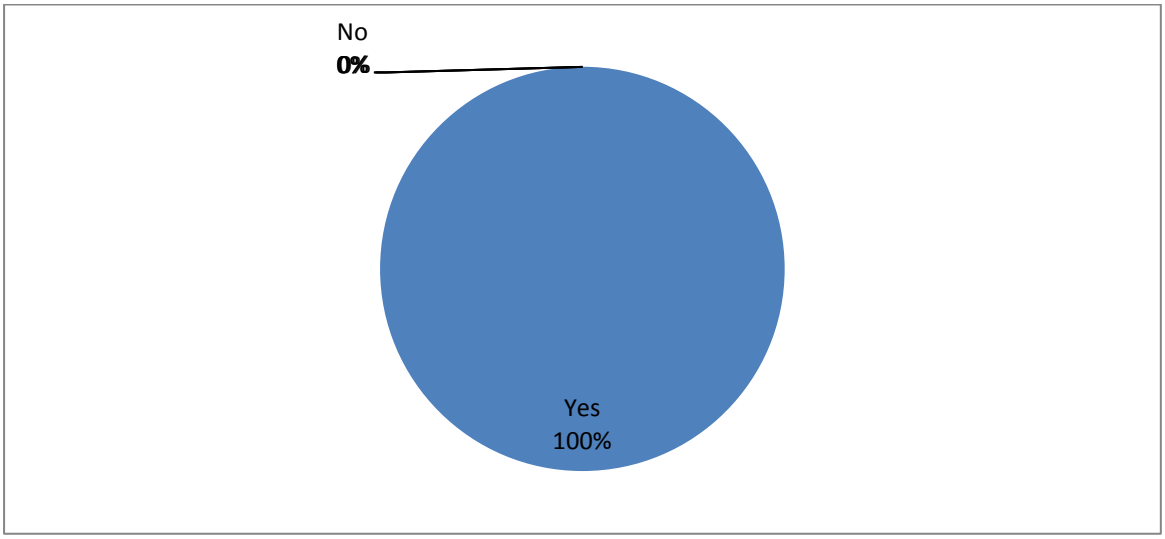
Pie chart 20: The use of Mind Mapping in presentation

The table above shows that the participants who have an idea about mind mapping technique; they use it to present a lecture. They make up 100% while there is no who opted "No".

Question number 8: when you use Mind Map technique in presenting a lecture, do the students process the information easily?

Options	**Subjects**	%
Yes	5	100
No	0	0
Total	5	100

Table 21: Students' process information when using Mind Mapping



Pie chart 21: Students' process information when using Mind Mapping

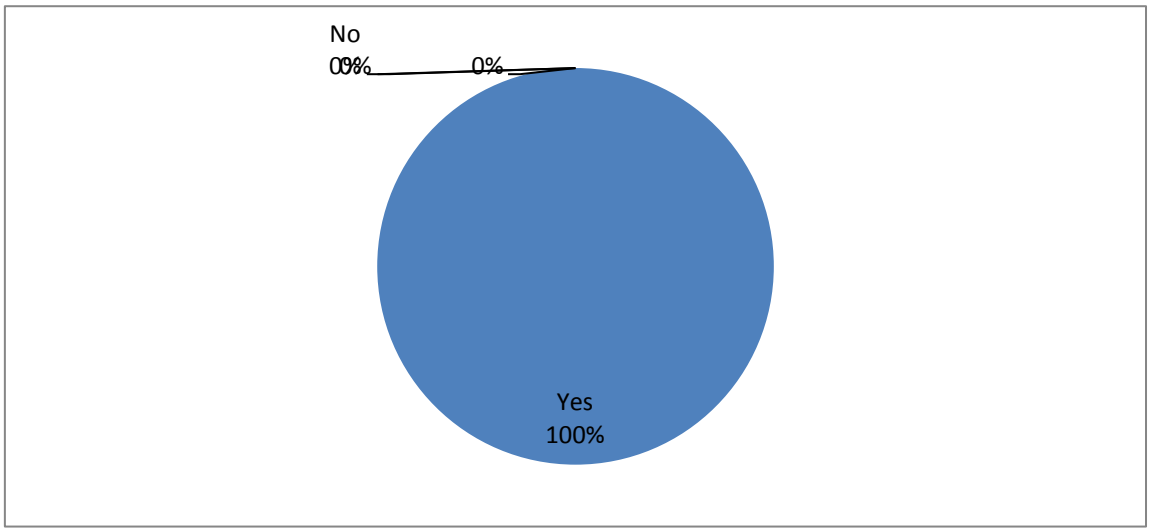
100% the whole participants whose answer is "Yes" in question 07 claim that when they use this technique, most of the students interact with them and memorize ideas successfully. The option "No" no one chooses it.

Section 3: Teachers' attitudes towards using Mind Mapping technique to improve students' memorization strategies.

Question number 9: Does the use of colures, shapes and pictures have an influence on students' processing the information?

Options	Subjects	%
Yes	5	100
No	0	0
Total	5	100

Table 22: The influence of colures and shapes on students' processing information



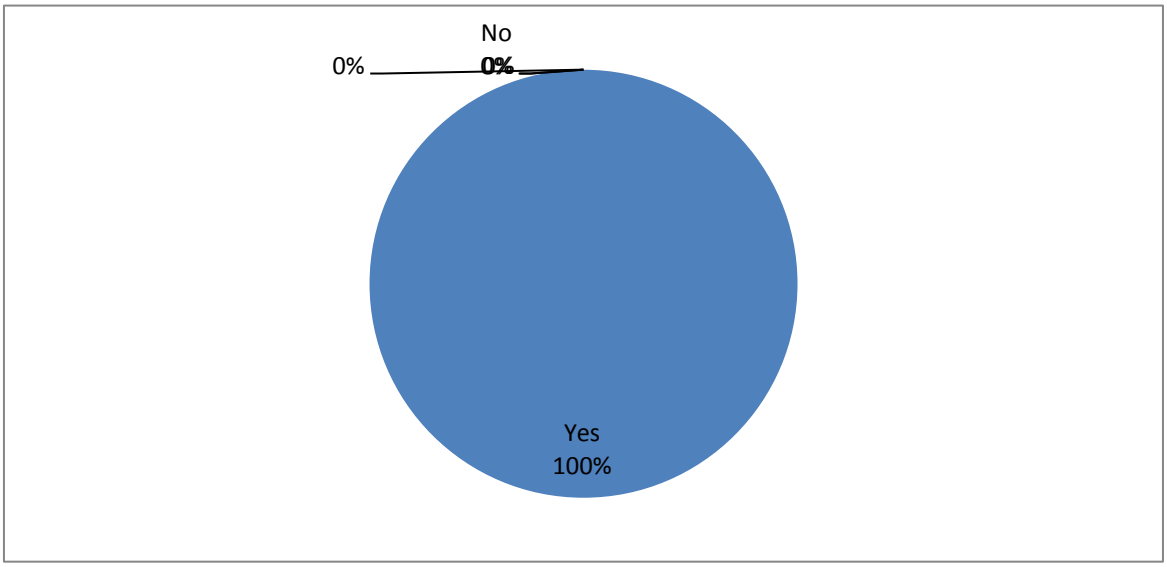
Pie chart 22: The influence of colures and shapes on students' processing information

According to the table above, all the participants (N=5) who is making up 100%, belief that colors, picture and shapes have an influence during the process of information and it gives them a clear image about the topic.

Question number 10: Do you think those students' memorization strategies as the use of diagrams to summarize the main points of the lectures, plays a crucial role on students' retrieving information?

Options	Subjects	%
Yes	5	100
No	0	0
Total	5	100

Table 23: The important of using diagrams in students' retrieving information



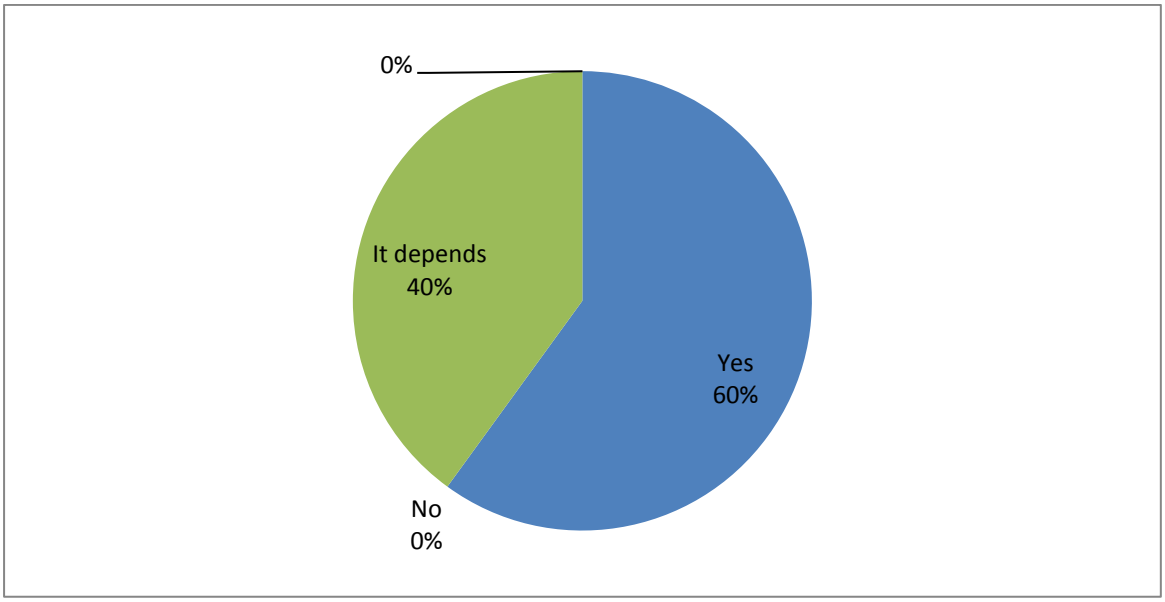
Pie chart 23: The importance of using diagrams on students' retrieving information.

In this question, teachers are asked to say whether the use of diagrams to summarize the main points of the lecture plays a crucial role in students' retrieving information or not. All five teachers (100%) indicate that the use of diagrams in summarize lectures have an influence on students' retrieving information (see pie chart 23).

Question number 11: do you think that Mind Mapping is a good technique for the student to retrieve information?

Options	Subjects	%
Yes	3	60
No	0	0
It depends	2	40
Total	5	100

Table 24: Mind Mapping as a good technique for retrieving information



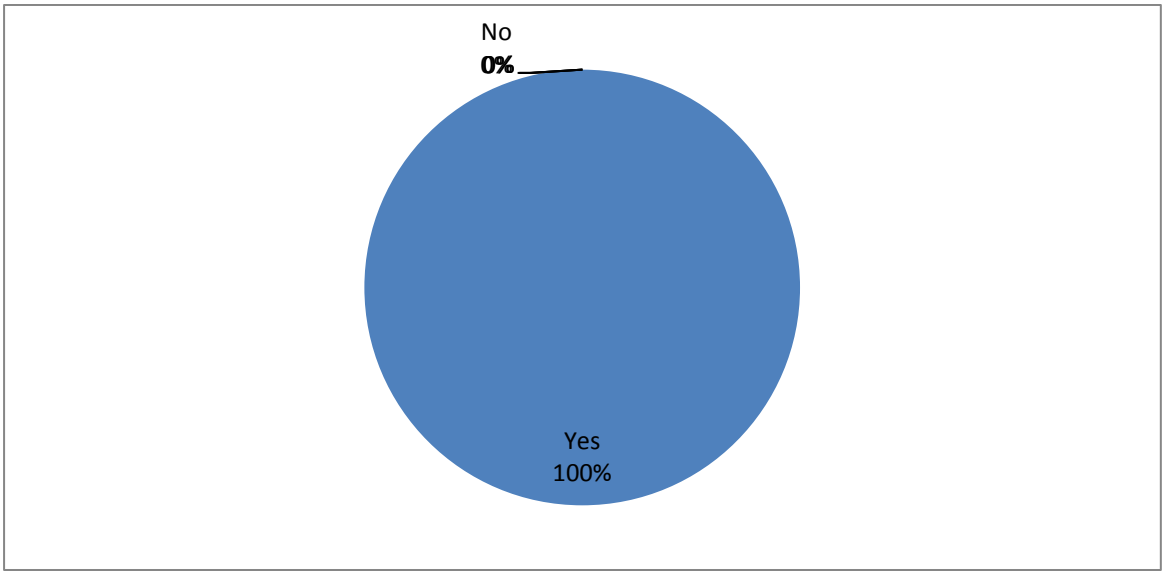
Pie chart 24: Mind Mapping as a good technique for retrieving information

As shown in the table above, three teachers (60%) say that Mind Mapping is a good technique for the students to retrieve information. no teacher (0%) indicates that Mind Mapping is not a good technique, and finally, two teachers (40%) indicate that the use of Mind Mapping technique is depend on the students' cognitive ability to retrieve information (see pie chart 24).

Question number 12: As a teacher, would you advise Mind Mapping technique for your students?

Options	Subjects	%
Yes	5	100
No	0	0
Total	5	100

Table 25: Teachers advising Mind Mapping technique for the students



Pie chart 25: Teachers' advising mind mapping technique for the students

This question aims to know if teachers advise students to use Mind Mapping technique or not. As clearly revealed above in the table, all teachers (100%) advise their student to use Mind Mapping technique. The results show the important of Mind Mapping technique for the students.

Discussion of the Questionnaires' Findings

Discussion of students' questionnaire. On the basis of the analysis of students' questionnaire, we have noted some important results about Mind Mapping technique and students' memorization strategies. First, half of the participants (N=50) have an idea about

Mind Mapping technique. Second, they use this tool in his/her studies; this means that they view that Mind Mapping is a good technique to organize their ideas and to memorize new information.

Concerning the question when the students were asked about the use of memorization, they responded with various answers most of them were multiples. This latter indicates the important of memorization in learning English. Students said that they use memorization to improve vocabulary, grammar and to pass the exams.

According to the questions that were asked about Mind Mapping technique, we have noted some important points. Most of the students have a long experience in studying English and the majority of them have a good level in English. In addition, the majority of them believe that Mind Mapping is a useful technique that can help them to store information. Nevertheless, when they were asked about their preference regarding the kind of materials' form (techniques), and most of the students recorded that they prefer to use Mind Mapping technique during summarizing of lectures.

Additionally, most of the students, when they were asked about the reason of using the Mind Map technique, reported that they use it to summarize lectures. What is important here is that this technique is more helpful for students to summarize lectures that what is remarkable about the high percentage (80%) of the responses. Moreover, students were asked if the Mind Map technique help them to retrieve information, all the responses were positive and decelerated that they retrieve and storage the information easily.

Finally, when they were asked about their suggestions about using Mind Mapping technique in memorizing lectures, the responses were similar. Responses were be: it's a good technique to memorize lectures, it help to memorize information in organized way, fast technique to remember information, it help to learn new words, it saves time and help to store

only the important points of the lectures, it help them to understand the lectures without asking teachers' help and by using Mind Mapping technique and the lesson become easy to remember.

Discussion of teachers' questionnaire. Similarly to the students' questionnaire, the data collected from the teachers' questionnaire revealed some substantial results concerning the relationship between our variables, Mind Mapping technique and students' memorization strategies. First, all teachers have a very long experience in teaching the English language, which allows them to judge, evaluate and provide answers thoroughly. Accordingly, most of the teachers have the Doctorate degree, which once more reflects their large experience. Second, all the teachers stated that they emphasize using memorization in the classroom, and they believe that it is a useful strategy and declared that students respond to it with attentive listening as well as interest. Third, teachers were asked about if they advise their students to use memorization, all of them stated that they advise them to use this strategy.

Furthermore, what is noticeable is that mind mapping technique, according the teachers, improved the memorization strategies that used by their students, this shows the effectiveness of this learning technique and signifies its importance to students. Moreover, concerning the mind map technique, all teachers believe that it is an important technique and they give attention to it. Also, all of them totally agree that this technique is good for students to summarize lectures, in order to improve their students' memorization strategies, teachers advise them to use mind mapping technique.

Moreover, when teachers asked about the influence of colures and shapes on students' memorization, all teachers decelerate that it help students to retrieve information in a short time. In addition, when teachers were asked about using Mind Mapping technique in their presentations, all of them are persuaded that by using this technique, students interact with

them and process information easily. Also, teachers were asked about if the Mind Map technique is good for the students to retrieve information or not, all of them stated that it is effective for the students to use this technique in order to save time and store information for a long time.

Conclusion

In conclusion to this chapter, the teachers and students' questionnaires results have revealed the effectiveness of Mind Mapping technique to improve students' memorization strategies. On the whole, the findings have shown some significant, common perceptions between teachers and students regarding Mind Mapping technique and memorization. Mind Mapping technique is a useful teaching and learning it helps them to process the information with success. Whereas, the teachers' answers indicate that 90% of them they use this technique during their teaching where they find students' reaction and interaction by adopting this tool when they present a lecture. Mind Mapping is full of colors, shapes, and key images which attract the students' intention. As we mentioned on the first chapter about brain that it is learn in non-linguistic way this means that it can process something's that contains colors, symbols and shapes rather than language.

Recommendations and Pedagogical Implications

After having obtained and analyzed the data, we suggest the following recommendations:

- Teachers should modernizing learning by organizing workshops for students to raise their awareness about cutting edge learning tools.
- Teachers need to give more attention to their students to provide the necessary techniques which can help them to memorize information perfectly.
- Teachers need to diagnose their students' weaknesses of understanding lectures in order to address them with the best technique. Mind mapping technique is useful technique that teachers can them to use it inside and outside the classroom.
- Teachers should apply the Mind Mapping technique to facilitate the process of learning
- Students should apply the Mind Mapping technique to improve their memorization.
- Using Mind Mapping technique help students to improve their memorization.
- Mind Mapping is a valuable teaching and learning technique, students need to relay on it.
- Mind mapping technique is a brain friendly way of learning that students need to be familiar with it.

Pedagogical Implications

Students of English language struggle with many Learning difficulties. These issues can be addressed by teachers with the use of the appropriate teaching technique. Mind mapping technique can help students to improve memorization process several and overcome many difficulties. It can help students gain time and effort. Also, it helps students develop their way of thinking. In addition, it increases students' ability to retrieve information easily.

In sum, mind mapping technique is closely related to memorization strategies. Mind mapping can be used as a teaching and learning technique in which students can be more comfortable when they using it during learning.

General Conclusion

There are numerous learning techniques that students can employ in their studies, nevertheless, not all of them are compatible and successful with every student due to many factors, mainly teachers' and students' attitudes and the nature of the course taught. Research and experience show that students as well as teachers can benefit considerably from the use of Mind Mapping technique due to its effectiveness in terms of gaining time. Accordingly, our study attempts to investigate the many role of Mind Mapping technique on in improving students' memorization strategies. The present study is a total of three chapters. The first two chapters are the theoretical part in which a review of related literature is presented, and the third chapter is the field work in which we administered a questionnaire for students and another for teachers. The first chapter outlines an overview about Mind Mapping technique. The second chapter provides some notions and general overview regarding the memorization strategies. The third chapter is concerned with the analysis of the obtained data from the teachers' and students' questionnaires, as well as introducing some recommendations and pedagogical implications.

In our study, we hypothesized that the use of Mind Mapping technique will improve students' memorization strategies. The obtained results confirmed our hypothesis that Mind Mapping technique use is beneficial and effective for improving the students' memorization strategies. The findings revealed that students need to know more about this technique in order to be more familiar with it and to use the Mind Map technique in a useful way. In addition, teachers and students showed positive attitudes towards Mind Mapping technique in the sense that it is practical and facilitates the process of learning.

Additionally, the present study is useful and contributing for both teachers and students in order to reach effective teaching and learning of English, although students tend to use effective learning techniques in their learning. Therefore, understanding when and how to

use Mind Mapping technique, knowing how to use this technique will ensure the success of this learning technique.

The results that we have come with prove that this technique can be applied in the English language teaching setting at Biskra University. The half of students is prefer to use Mind Mapping tool in learning process. Whereas, the other half prefer to use colors, pictures and shapes in the board which make them comfortable and help them to memorize and to organize the ideas in effective way. While, teachers who are using Mind Mapping technique during his/her teaching where h/she found the students' reaction and interaction. Moreover, it helps students' retrieving information.

In short, Mind Mapping technique is one of the best thinking tools that can help students to transmit and recall information in organizational way and with success. Finally, future research should be done with a larger population to test the applicability of the findings.

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APPENDICES

APPENDIX A

Students' Questionnaire

Dear student,

We would be so grateful if you could answer the following questions about your opinion about **MIND MAPPING IN IMPROVING STUDENTS' MEMORIZATION STRATEGIES**. Your answer will be very helpful for the research project we understand. We hope you will answer with full attention, honesty and interest.

To answer the question, you are required to put tick (√) in the box corresponding to your answer. Be sure that any information you will provide us within this questionnaire will remain strictly anonymou.

Personal Information

1-How long have you been studying English?

Years:……..

2- How do you consider your level in English?

A-□Very good ☐

B-□Good ☐

C-□Average ☐

D-□Poor ☐

Students' memorization strategies

1- Is memorization one of your ways to learn English?

Yes ☐ No ☐

-If yes, what types of the language do you most memorize?

a) Vocabulary ☐

b) Idioms ☐

c) Poems ☐

d) Stories ☐

2- Why you use memorization ?

a) To learn vocabulary ☐

b) To improve grammar ☐

c) To pass the exams ☐

d) It is only way to succeed ☐

e) It saves time ☐

f) It is a must ☐

Mind Mapping technique

1- Do you think that summarizing the main points of the lecture on diagram is better for you in order to process it perfectly?

Yes ☐ No ☐

2-Have you use the Mind Map technique before?

Yes ☐ No ☐

A- For which purpose:

1-to draw the outline of your essay ☐

2-to summarize lectures ☐

3- to solve your problems ☐

3- Does the use of colors, pictures and shapes in summarizing lecture make you more comfortable to learn and gives you a clear image about the topic?

Yes ☐ No ☐ Both ☐

4- During the recapitulation of lecture, I would like to:

a) Taking notes ☐
b) Highlighting ☐
c) Using Mind Map technique ☐

5- Have you ever been summarize your lessons by using the Mind Map technique?

Yes ☐ No ☐

6- In which modules did you use this technique?

a) Grammar ☐
b) Phonetic ☐
c) Written expression ☐
d) Linguistics ☐
e) Culture of language ☐
f) Literacy texts ☐
g) All modules ☐

.

Students' attitudes towards using Mind Mapping techniques to improve their memorization strategies.

1-Does the use of Mind Map technique help you to remember information?

Yes ☐ No ☐

2- Does the use of Mind Map technique help you to store information for a long time?

Yes ☐ No ☐

3- Do you think it is effective to use the Mind Map technique to memorize lectures***?***

Yes ☐ No ☐

4- Other suggestions about using Mind Map technique in memorizing lectures

.....

.....

.....

……

……

Thank you

APPENDIX B

Teachers' Questionnaire

Dear Teacher,

This questionnaire will help us to bring to fruition our Master degree research. The purpose of this questionnaire is to help to **investigate about the role of mind mapping technique in improving EFL memorization strategies**. Be sure that your answers will help us to identify this aim.

Thank you very much for taking time to share your experience and knowledge. Your input is very important and greatly appreciated

Please, put a tick (√) in the appropriate box (es) or give full answer(s) on the broken lines

Personal Information

1-How long have you been teaching English?

Years :……

2- Your degree:

a) BA (Licence) ☐

b) MA(Master/ Magister) ☐

c) PhD(Doctorate) ☐

Students' memorization strategies

1-Is Memorization one of the strategies you emphasize in your class to help students to learn English?

3- As a teacher, would you advice Memorization to your students?

Yes ☐ No ☐

1-Do you have an idea about Mind Mapping technique?

Yes ☐ No ☐

2- How can you define this technique?

.....

.....

.....

3- Have you used Mind Mapping in your presentation or preparing the lecture before?

Yes ☐ No ☐

4- When you use Mind Map technique in presenting a lecture, do the students process the information easily?

Yes ☐ No ☐

5- Do you think that Mind Mapping is a good technique for presenting the lecture?

Yes ☐ No ☐

Teachers' attitudes towards using Mind map technique to improve students' memorization strategies

1- Does the use of colors, shapes and pictures have an influence on students' understanding of the lesson?

Yes ☐ No ☐

2-Do you think that students' Memorization strategies as the use of maps or diagrams, to summarize the main points of the lecture, plays a crucial role in students' lesson comprehension?

Yes ☐ No ☐

3-Do you think that Mind Mapping is a good technique for the students to retrieve information?

Yes ☐ No ☐ It depends ☐

4- As a teacher, would you advice Mind Mapping technique to your students?

Yes ☐ No ☐

Thank you

Résumé

Cette étude vise à étudier le rôle du Mind Map sur les stratégies de mémorisation des élèves. Nous avons émis l'hypothèse que l'utilisation de la technique Mind Map améliorera les stratégies de mémorisation des élèves. La présente recherche se concentre sur l'évaluation de la faisabilité et l'applicabilité de la technique Mind Map comme un outil efficace pour résumer, comprendre et rappeler l'information. Pour atteindre les objectifs de l'étude, une méthode descriptive qualitative a été suivie. Elle vise à décrire deux variables: Mind Map comme variable indépendante et stratégies de mémorisation comme variable dépendante. Dans cette dissertation, nous avons présenté une nouvelle technique qui a été considérée comme un outil convivial pour transmettre et rappeler l'information qui est la technique de Mind Map. Elle s'est avérée être une bonne technique de mémorisation, de pensée créative et d'apprentissage. Nos principaux instruments de recherche pour recueillir des données étaient deux questionnaires administrés aux enseignants et aux étudiants. L'échantillon de la recherche est de 5 enseignants et 50 étudiants de première année LMD, au département des langues étrangères, filière de l'anglais, Université de Biskra. Après avoir analysé les données obtenues de la présente recherche, il a révélé que Mind Map est une technique d'apprentissage et d'apprentissage pratique et efficace. Cela peut affecter et développer positivement les stratégies de mémorisation des élèves. En fait, les enseignants et les étudiants ont montré des attitudes positives à ce sujet. Enfin, sur la base de nos résultats, des recommandations et des implications pédagogiques sont suggérées et nous espérons qu'elles peuvent aider les élèves à utiliser la technique de Mind Map pendant l'apprentissage.

Mots-clés: Mind Map technique, stratégies de mémorisation, efficacité, technique d'apprentissage, première année, UMK Biskra.