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The Role of Mind Mapping in Enhancing the Student's Writing Proficiency

A Case of 2nd Year Foreign Language High School at Bouhana Massoud High School

A Dissertation Submitted in Partial Fulfillment for the Requirement of the Master Degree in
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Dedication

I'm so thankful to Allah for all his blessings and for giving me the strength to complete

this work.

I dedicate my work to my family and close friends

Thank you to my beloved parents OMAR and AZIZA whose love, affection, encouragement

and blessings of days and nights have always been a source of inspiration

for me.

To my lovely brothers AYOUB , OUSSAMA , ADEM Thanks for always supporting me

and standing by my side whenever I needed you.

To my little princess ALAA , AFNANE whom I deeply love

Joyful kisses goes to my best friends AFIFA , AMIRA , WIAM , SARA , LINOCH , BANO

I am truly thankful for having you in my life

"To my dearest   WISSAM " I'm so grateful to share this work with you

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chance to go through this experience, support and guidance.

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working very hard even though it wasn't easy for carry on this journey , I'm so

proud of myself and the tremendous efforts I have made all these years

Djihane

Dedication

In the name of ALLAH, the most Gracious, the most Merciful,I dedicate this work to:

The apple of my eye; my dear parents AHMED and AKILA.

Thank you for your love and support.

To my beloved husband ; Bader.

My dear sisters: Ghadda, Anissa, Salima, and my right hand

Achoik.

My brothers: Mohamed, Houcin, Dawed, Salim.

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To all who love me.

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Abstract

Mind mapping is a helpful and effective technique that students and teachers can use for a variety of purposes. The purpose of this study is to look into the role of the mind mapping technique in enhancing students' writing proficiency. To achieve the study's aims and to answer these questions, a questionnaire was distributed, and an experiment with the second-year foreign language students at Bouhana Massoud High School was conducted during 5 weeks for the academic year 2022-2023. Following that, a structured questionnaire was carried out with five teachers of English. The study was based on both quantitative methods (pre-posttest, questionnaire) and qualitative methods (textual analysis) of data collection. Two groups of 56 students attended five sessions on the mind mapping technique, where they experimented with and learned how to utilize it. The results of the pre- and post-tests given at the beginning and end of the study revealed that students' paragraphs improved greatly as a result of teaching and experience using mind mapping. They shifted from messy and disorganized pieces of writing to more elaborate ones embodied in well-designed mind maps. Therefore, the research hypothesis was confirmed, and the Mind Map technique was found to be an effective and helpful strategy for improving English learners' proficiency.

Key Words: Mind mapping, Writing , Writing Proficiency , High School Learners, English Language.

List of Abbreviations & Symbols

EFL: English as a foreign language

FL: Foreign Language

LS: Learners

HS: High School

MM: Mind Mapping

EFL: English as a Foreign Language

Q: Question

H: Hypotheses

%: Percentage

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General Introduction

Knowing any language requires mastery of its different skills, of which writing is one of the most important. It is necessary for expressing one's ideas, thoughts, opinions, and attitudes. Students may write for personal enjoyment or for a variety of different reasons. Learners today are looking for practical techniques and solutions to their learning process. Mind mapping is an effective technique that both students and teachers may use for a variety of aims. It is a simple brainstorming technique used to improve the quality of an essay. Mind mapping is a powerful visual and creative learning method that used by many to help students enhance their writing proficiency. It is an effective way of brainstorming, organizing, and comprehending information, which may help students in producing written pieces with more clarity and stronger arguments. Students learn to better clarify their thoughts, expand their writing skills, and write more cohesive and well-structured essays by using mind mapping. In this research, we will look at how mind mapping can help students improve their writing skills. It is a method of representing ideas, concepts, and lectures in a non-linear way that describes a certain topic and the relationships between in elements. The brain's primary language is not spoken nor written words; the brain works by using all of the senses to create associations between images, colors, key words, and ideas (Buzan, 2011).

1. Statement of the Problem

Writing is a skill that can not be overlooked in High School classes since of its high importance. Furthermore, Alkamli (2019, p.1) claims that "along with reading and understanding, writing is an indispensable part of the acquisition of a foreign language."

Despite the importance of writing , teachers and students consider writing as a difficult and time-consuming skills to teach and develop. In this sense, Nick et al. (2010, p.8 in Fareed et al, 2016) state that "writing is widely recognized as one of the most difficult skills for students to master." Furthermore, Nunan (1989, p.36) states that "writing is an extremely complex, cognitive skill for everyone because in this activity, the writer must demonstrate control of several variables at the same time." As a result, writing is widely seen as a tough skills, and the majority of HS students struggle with it. Based on our previous observations, these issues are related to getting started and structuring their thoughts. We discovered that when learners collect information about a specific topic, they do not know how to classify and organize it in their drafts or how to turn it into a paragraph. Teachers and students utilize a variety of techniques to help and develop their writing skills. Given that the majority of students struggle to get started, we assume that pre-writing strategies can help them overcome these difficulties .We propose using a thought mapping technique in the classroom to assist students improve their writing skills. According to De Porter et al. (1999, p.175 in Khudhair, 2016), "mind mapping is a creative note taking method that helps us remember information." This suggests that this technique helps students in memorizing ideas.

Mind mapping can be a useful tool for students to better plan and organize their ideas and thoughts; it may also help students acknowledge the importance of concepts in books and conferences. As a result, according to McGriff (2000, p. 9 cited in Naqbi, 2008), "mind mapping is an excellent way to help learners organize knowledge, empower themselves to

better comprehend the key concepts, and principals in lectures, reading, or other instructional materials."

2. Aim of the Study

The purpose of this study is to look into the mind mapping technique for improving students' writing skills. A mind map is a technique of organizing information that demonstrates relationships between elements of the whole. It tends to revolve around a single concept, which is often drawn as an image in the center of an empty page and to which are attached representations of concepts such as images, words, and so on. The major ideas have a direct connection to the central theme. Hence, the main aim of our research is investigating the impact of mind mapping as one of the pre-writing strategies in solving learner issues and improving HS learners' writing proficiency.

3. Research Questions and Hypothesis

So in our study we intend to answer the following questions

Q1: Does mind mapping influence students' writing proficiency ?

Q2: Do teachers consider mind mapping a contributing factor to enhance students' writing proficiency ?

On the basis of the aforementioned questions, the following hypotheses will be advanced
H0. The use of mind mapping technique will help to enhance students writing proficiency.
H1. The use of mind mapping technique will not help to enhance students writing proficiency.

4. Means of Research

For performing this research and test the hypothesis's validity, a descriptive study was chosen. We relied on two data collection instruments which were the questionnaire and the

experiment. First, the questionnaire was distributed to 56 second-year English students at Bouhana Massoud High School in Ferdjioua. This instrument gave access to a variety of information in a short time; it was divided into two sections. The first section was titled "Writing skills," and it attempted to identify students' writing difficulties as well as their thoughts on mind mapping. The second section was titled "Mind Mapping," and it focused on using mind mapping to enhance students' writing skills. Secondly, five high school English teachers were asked to enrich our knowledge of the topic, obtain more valid views on the use of mind mapping and its effect on writing skill, and, most importantly, to reinforce the findings of this study.

5. Structure of the Study

This thesis was divided into two main chapters. The first chapter represented the theoretical part; meanwhile, the second chapter represented the practical part.

The first chapter was divided into two sections: the first highlighted the definition of writing, its importance, its elements, the difficulties of writing faced by English as a foreign language (EFL) students as they learned, and the most effective approaches to teaching writing. It eventually delves into the topic of writing proficiency and its importance. The second section was devoted to mind mapping, and it explored the concept of mind mapping, the most important mind mapping theories, and mind mapping in foreign language learning (FLL). Finally, it investigated mind mapping deeply as a new area of research dedicated to examining the relationship between mind mapping and writing proficiency.

The second chapter gathered everything connected to the experimental research. It consisted of the technique, which encompassed everything connected to the data collection method, the questionnaire and the experiment, the analysis of the findings, and the

overlapping areas. Furthermore, it explained the difficulties found in this study and provided certain implications and suggestions for future research.

Chapter One: Theoretical Part

Section one: Writing Skill

Introduction

Learning and teaching a foreign language with its four skills is a complex process, specifically writing is regarded as the most complex and toughest component of learning a language. Educators are constantly searching for effective techniques that could aid students in producing better written work. This section will deal with writing skill, including its definition according to different researchers. Also, it sheds light towriting proficiency, the importance of teaching and learning writing, elements of effective writing. Finally this section ends with different approaches to teaching writing, stages of the writing process, and writing difficulties.

1.1 Definition of the Writing Skill

There are several views towards the definition of writing that could be viewed according to numerous researchers. According to Albesher, et.al, (2012, p.192) stated that: Writing, as one of the important means for communication, is very important in English language learning particularly in academic scenario in the universities. EFL learners in different part of the world need to be trend to write well so as to be able to communicate with English speaking people and to cope with their academic requirement. So, the writing skill opens the door to the learners to be able to communicate easily with others, it is a means of communication.

Another definition suggested by Nunan, et.al (1989):

Writing is a complex cognitive activity in which the writer is demanded to demonstrate control of a number of variables simultaneously at the sentence level including controlof

content, spelling, and letter, formation, and beyond the sentence structure and integrate information into cohesive and coherent paragraph and text (p.36).

In other words, writing is viewed as a complicated task, since the writer has to control both content and form in order to have a clear cohesive and coherent piece of writing.

According to White and Arndt (1991, p.3) "writing is far from being a simple matter of transcribing language into written symbols: it is a thinking process in its own right." writing is more than the acquisition of reproducing words into linear signs; it is a mode of reflection.

Writing is the one stated as the basic language skill by Harmer (2002) and is ever left ignored in language learning process because it is as important as reading, speaking, and listening, but it requires consistent efforts ad regular practice to develop certain proficiency.

1.2 Definition of Writing Proficiency

Assessment of writing proficiency I English as a foreign language (EFL) has long been a subject of discussion and research. The concept 'proficiency' is to begin with, not easy to define.

So what is proficiency?

The predominant view until the late 70's viewed that proficiency was mainly equal to grammatical and lexical competence and that these two elements alone were enough to enable communication.

Developing the writing proficiency of students is a central activity of the language learning process. Weigle(2002) informs us that the increasing importance being placed of L2 writing skills has led to greater demand for valid and reliable ways of testing learners' proficiency both for and beyond the classroom.

Writing proficiency is an important skill to have in today's world. It is a skill that can be used in many areas of life, from writing essays for schools to writing emails for work. Writing proficiency can be defined as the ability to write clearly and effectively, using correct grammar, spelling, and punctuation.

In addition, writing proficiency also involves being able to express ideas in a logical and organized manner.

1.3 The Importance of Teaching and Learning Writing

Hyland (2003) stated that the writing skill plays a crucial role in teaching and learning EFL. It is a way through which individuals' create a coherent relationship through their engagement with others. Individuals can increase and develop their learning styles. Alsothey feel relaxed and communicate easily their thoughts while writing. In addition to that, it helps in developing the psychological state of the learner since when learners write about their feeling and experiences they reduce depression.

Harmer (2001) suggested four reasons behind teaching writing. The first one is that teaching writing works as an encouragement because learners considered it helpful to write down sentences using a new language. Second, it helps them to improve their language. Next, teachers through teaching writing may know and notice learners' learning styles. The last reason provides by Harmer was that writing is an important skill as reading, speaking, and listening and equally to them.

1.4 Elements of Effective Writing

Starkey(2004) stated that in order to produce a great piece of writing, learners need to follow effective elements.

a. **Organization**

The first important element in achieving a well structured piece of writing. Learners present their ideas and thoughts by using specific ways and techniques before writing, they need also to use and know the appropriate linking words and phrases to make the ideas well organized in order to be understood by the reader.

Starkey (2004) claimed that :

By following an organized method of writing, you will guide your reader from your first to last sentence. He or she will be able to see how the various points you make in your piece of writing work together and how they support your thesis. (p.2)

Students in their writing should be aware about the process of writing and try different organizational methods such as outlines, pyramid charts, and lists, they should also develop their ideas logically, write grammatically correct and focus on the content and meaning.

B. Clarity

Another important element that helps the learners to produce a great piece of writing is clarity. Through avoiding the use of ambiguous words and sentences learners may achieve clarity by using simple and short sentences.

Starkey (2004,p.9-12) listed certain points that the learner should use during their writing in order to achieve clarity:

They should avoid using ambiguous words that have more than one meaning and that could confuse the reader.

They should use precise and concise words that lead directly to the meaning in order to avoid wordiness. For him wordiness is boring and it takes up time and place.

There are two equally important approaches to more concise writing: eliminating unnecessary words and phrases, and using active voice whenever possible. (p.15)

C. Word Choice, Brevity and Simplicity

The learner should be selective in choosing the right words while conveying his/her ideas in order to be understood by the readers and what he/she is writing about. Avoid the informal language by knowing the connotative and denotative meaning of the word. Furthermore, learners need to convey more information with less words in order to not make the product boring and save time. Also, the words should be simple and understandable for the reader.

D. Mechanics

Starkey(2004) addresses in this context, other basic rules and mechanics of writing in terms of grammar, spelling, and punctuation, which are considered as key elements in written communication. In short it refers to the language graphic convention that writing is done with. How words are spelled ad arranged on paper.

1.5 Approaches to Teaching Writing

There are many approaches to the teaching of writing skill in ESL classes, Raimes (1983) stated: 'there is no answer to the question of how to teach writing in ESL classes. There are as many answers as there are teachers and teaching styles, or learners and learning styles.'(p.5)

> ➤ **The Product Approach**

Raimes (1983) also called it the controlled to free approach. She claimed that: "the controlled to free approach in writing is sequential : students are first given sentence exercises, then paragraphs to copy or manipulate grammatically, for instance changing questions to statements, present to past, or plural to singular."(p.6). this approach emphasizes

the mastery of three features that should be taken in consideration during the writing: grammar, syntax and mechanics of spelling, pronunciation and handwriting.

Yi (2009) called this approach text oriented approach, he emphasizes that the main purpose of this approach is to link between sentences so that to produce a well coherent discourse. He stated that: "the aim of this approach is to teach that writing is not a collection of separate sentences, but involves connecting interrelated sentences to produce a coherent discourse."(p.57)

So, the product oriented approach from its name, is concerned with the final results of the writing process and correct forms of language.

> **The Process Approach**

In the 1970, the process approach came as a reaction to the drawbacks of the product approach and then started to replace it. The main concerns of this approach stand in opposition to those of the product approach. It concentrates on the way writers begin and produce their writing rather than the product itself Raimes (1983) stated that: "writers ask themselves not only questions about purpose and audience, but also the crucial questions: how do I write this? How do I get started? All writers make decisions on how to begin and how to organize the task."(p.10)

Hairston (1982) claimed that:

We cannot teach students to write by looking only at what they have written, we must also understand how that product come into being, and why it assumed the form it did. We have to try to understand what goes on during the act of writing…if we want to affect its outcome; we have to do the hard thing, examine the intangible process, rather than the easy thing, and evaluate the tangible product. (p.84)

In the process approach students do not focus only on syntax and grammar, but rather on how writers go through the stages of writing: prewriting, drafting, revising, and editing, as Terrible (1996, p.37)suggested that this approach stresses "…writing activities which move learners from the generation of ideas and the collection of data to the publication of a finished text.''

> **The Communicative Approach**

Raimes (1983) emphasized that both the purpose and the audience of the piece of writing have a crucial role and should be taken into consideration. He said: ''students' writers are encouraged to behave like writers in real life and to ask themselves the crucial questions about purpose and audience:

Why I am writing this?

Who will read it? (p.8)

This approach motivates learners to use language and to be active participants through a number of communicative activities. Widdowson (1978) stated that: "it concentrates on getting learners to do thing with language, to express concepts and to carry out communicative acts of various kinds."(p.159)

According to Hymes (1972) The communicative approach does not pay attention to the rules of grammar.

> **The Genre Approach**

Lynch (1996) defined the word genre as follows:

A genre is a type of text (e.g. recipe, prayers, advertisement), which is recognized as a' type' by its overall content, structure and function… readers and writers of a specific genre

are members of a community people sharing interests and expectations about its communicative purpose.(p.148)

The genre approach comes into existence during 1980's. According to some researcher's definitions this approach considers writing as a way through which both the learner and the reader can interact easily. It is defined by Swales (1990) as "a class of communicative events, the members of which share some sets of communicative purposes."(p.58)it means that students should specify their purpose of writing and to whom the written text is delivered. So students should take into consideration different factors. Harmer (2001) stated that when students write within a certain genre they need to have knowledge about the type of text that they are going to write, analyze and manipulate the grammatical and lexical features of that text, pay attention to the readers, after that they can produce their own final product, here the students will be creative in their writing since they have the opportunity to master different structures of different genre according to specific setting.

1.6 Stages of the Writing Process

Students must go through a number of phases or procedures in order to create a writing that is properly structured and ordered. These steps are designed to lead and direct the students from the start of the activity to its completion. In other words, for the final output to be accurate, authors must go through a number of stages. The steps and activities of the process approach to writing that occur in L2 classroom, including as prewriting, drafting, and revision that may be performed in response to feedback from the teacher or from peers, are crucial.(krill, 2003).

> ➢ **The Planning Stage**

A written text's composition process must start with planning. It is the first action the author took. It includes everything the author does before beginning to compose the text. According to Brown &Hood (1989)most writing involves some preparation. Your reader, your purpose, the material, and the writing setting will all have a significant impact on how long you spend on this preparation and what you accomplish.

The planning stage also includes a sub-step which is pre-writing. This step includes everything the writers do before start drafting in which they narrow the topic, asses the audience and clear the goal behind their writing.

➢ **The Drafting Stage**

After finishing the pre-writing activities, during drafting students get started to write their text without stopping, here writers have to focus only on the actual writing and leave the check of mistakes till the final stage. As Brown (1989) said "the drafting stage is where you really begin writing. The most important thing here is to get words onto paper. It is not the time to worry about spelling, grammar, punctuation or the best wording."(p.14)

➢ **The Revising and Editing Stage**

To revise actually means to're-see' i.e. to see or to look again . It is the third stage in the process of writing. The writer will review and revise his/her piece in order to correct or change the errors and mistakes whether in relation to the form, the meaning, or the information written. This stage can done with the contribution of a reader (peers or teachers) who can comment, suggest, and provide feedback.

➢ **The publishing Stage**

In this last stage, the writer will produce his/ her final version of writing which should be ready to serve to the readers .It is also called the publishing stage, William (2003) defined

it as "sharing your finished text with its intended audience …it includes turning a paper into a teacher, or an agency."

1.7 Writing Difficulties

Writing is considered as one of the most needed skill not just in classroom but in a larger content of life as well. For students, writing has been difficult since they have so many issues learning it. There are many different problems that could arise in EFL classes. In relation to that, Harmer (2004,p.61) stated that this disinclination could be due to many reasons like:

- They are anxious about their handwriting, their spelling, or their ability to form sentences and paragraphs.

- They are unmotivated to write in English because they do not usually write in their first language

- They fear that they cannot say much.

- They have no interest in writing.

In line with this, Harmer (2004) said that students who lacked confidence in writing needed suitable activities, and more time to practice in order to help them feel comfortable when writing in English.

Also the learners had to overcome the challenges of lack of vocabulary, spelling mistakes, punctuation, and poor cohesion and coherence, styles and formats, and motivation as well, therefore , to complete writing tasks successfully because students are not motivated enough to share their ideas.

Conclusion

In order to effectively support the teaching and learning process, EFL teachers and students must both develop their baseline knowledge about the writing process, which is one of the most fundamental but troublesome and challenging skills. Because English represents a whole distinct linguistics system for FL students, improving writing skills continues to be one of their top priorities. It is the duty of teachers to select the strategy that best satisfies the needs of their students and the requirement of their course, therefore they must be aware of the various methods of teaching writing. Writing is both a talent and a tool for self-expression so it is therefore regarded as a complicated kind of communication.

Section Two: Mind Mapping

Introduction

Most people begin learning without enough knowledge of the learning process, which makes the latter difficult and time-consuming. As a result, in any educational situation, whether studying a language, a sport, or a musical instrument, people should first look for simple and effective strategies and practices to help them learn more efficiently and effectively. Furthermore, students must be aware of the amazing machine that is available to them, the brain, and how to unlock its power and use it to their benefit. Mind Mapping, an attractive visual diagram-based technique, is an important tool for helping learners process and capture knowledge. It also helps them to improve their memory, improve the way they learn, and get the most out of their time. This section provides an overview of mind mapping as a prewriting development approach, including a definition of mind mapping, its structure, types, uses, and how to mind map steps. It also discusses the qualities of mind mapping and its relationship with technology, as well as the advantages and disadvantages of this technique.

2.1 Definition of the Mind Mapping

Tony Buzan was the first to discover mind mapping in 1974. He is a researcher, educator, advisor, and the million-copy bestselling author of Use Both Sides of Your Brain, Perfect Memory, Speed Reading, and The Mind Map Book. His work has been translated into over 30 languages and published in over 100 countries.

According to Buzan (1994), mind mapping is a "uniquely appropriate learning tool."(p. 87) . It is a picture, not just something that employs images. This description indicates that a mind map is a strategy that students can use in every learning scenario since its visual form makes the relationship between various parts more obvious. Similarly,

Michalko (2001) regards the mind map as "the whole-brain alternative to linear thinking."(p. 62, 63). It extends out in all directions and captures concepts from all perspectives. In other words, the mind map reflects how our brain actually works. Mind mapping is also known as the act of naming our thoughts, ideas, and, on occasion, emotions. Once recognized, they can be arranged in a hierarchical order. The thoughts may appear chaotic at first glance; however they are extremely ordered (Rhodes, 2013).

According to Knee (2013, p. 183) "a Mind Map is a powerful graphic technique that provides a universal key to unlocking the potential of the brain". It combines the whole range of cerebral abilities: word, image, number, logic, rhythm, color, and spatial awareness in a single, powerful package. As a result, it provides the freedom to wander the boundless expanses of the brain." This study looks into whether mind mapping is a useful new approach. Furthermore, mind mapping is a useful approach that may assist Learners readily represent their thoughts and ideas, as mentioned by Buzan (2006), "mind map is the most excellent tool which helps mind to keep thinking."" (p.4). This strategy assists learners in simply constructing a text and remembering items that they want to describe. Moreover, he claimed that the effectiveness of the Mind Map stays in its dynamic shape and form, which mirrors the shape of a brain cell; as a result, the brain would be encouraged to work in a fast, efficient, and natural manner (2006, p. 138).

To summarize, mind mapping is a thinking tool that facilitates the transfer of information into and out of the brain, saving time and energy. It is a combination of words, symbols, colors, lines, and images that encourages learners' creativity and learning capacities, as well as making the work of learning more fun. It is one of the most powerful tactics you can use to easily grasp complex frameworks, better organize your thoughts and recall information, and enhance your performance level in every element of your life.

2.2 Mind Maps and the Brain

The human brain is one of the most complicated and perfect creations in the universe. According to Buzan, Griffiths, and Harrison (2013), the brain is divided into two hemispheres: left and right. The left hemisphere is in charge of stimulating visuals and colors, whereas the right hemisphere is in charge of words and sequences (see figure.1). In truth, brain language is neither spoken nor written, but rather the visual connection of images, and because the mind map is an image, the brain may recall these images spontaneously. The right hemisphere is the most essential portion of the since it controls all of the primary learning skills and memory that we rely on to improve as humans.

Figure 1

Left and Right Brain Skills (Buzan, 2005, p. 39)
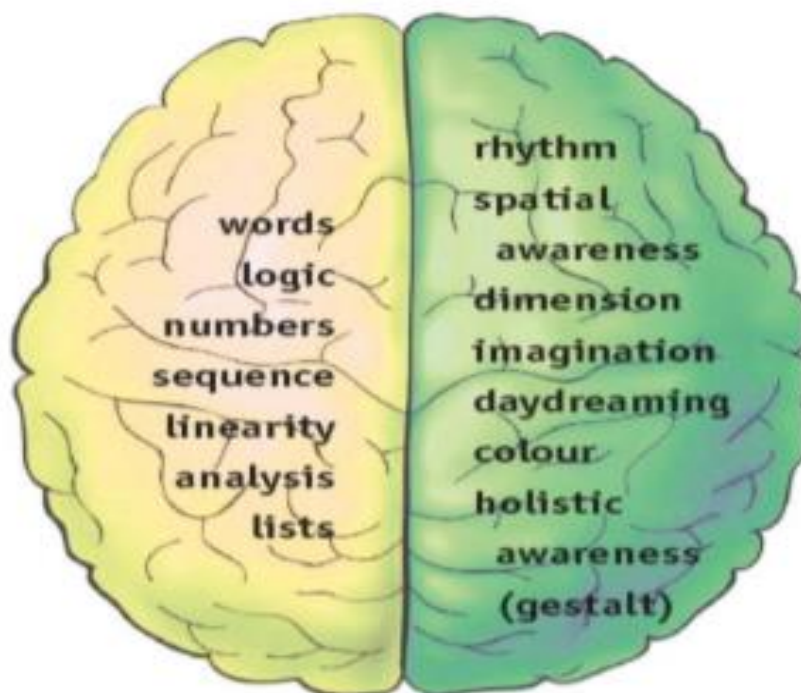
2.3 Characteristics of Mind Mapping

According to Khoiriyah (2014), mind mapping has four key characteristics:

• The object of attention is crystallized in the central figure.

• The main themes of the object branch out from the central figure.

• Branches contain a key image or key word printed on the associated line. Topics of lower significance are also represented as branches related to the higher significance branches.

• The branches form a connected nodal structure.

The following mind mapping contains the central theme (Food groups), the main ideas are branched from the central theme (Fruits, Vegetables, Meat...), and sub-ideas or branches are derived from those main ideas or branches, fruits (apple, lemon...), vegetables (carrot, onion...), meat (fish, chicken...), colors, pictures, and shapes are used to connect among ideas in details.

Figure 2

A sample mind map on food groups
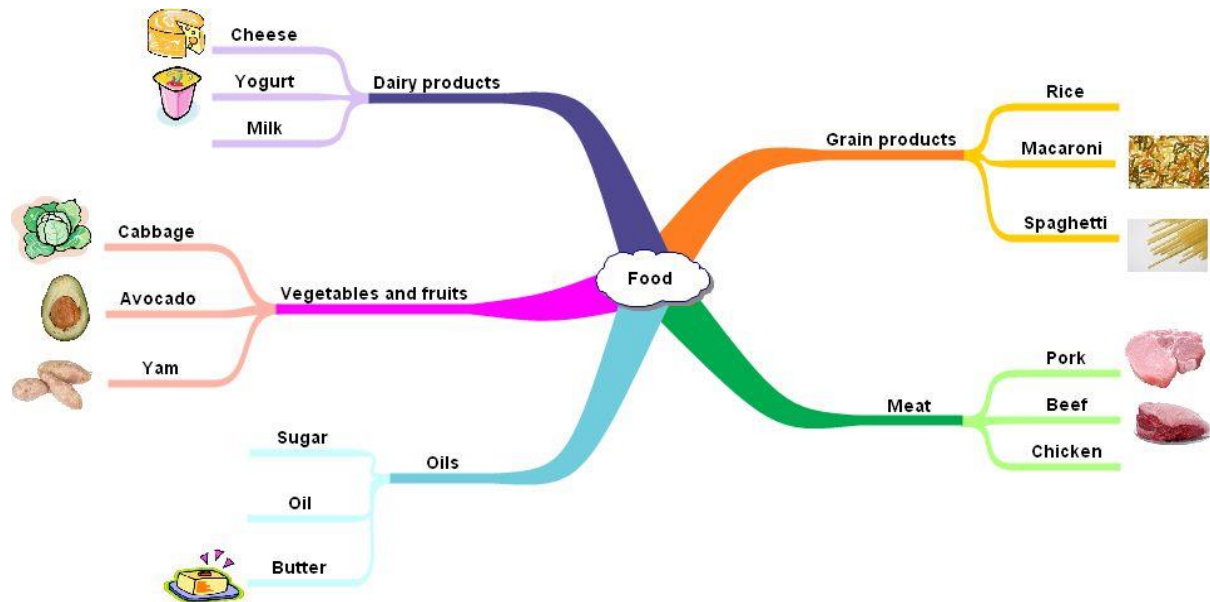
2.4 Elements of the Mind Map

The components of a mind map are relatively basic and easily available to everyone. There are six basic components that make up a mind map, and they are supposed to help the individual in order to be organized and productive:

- **A paper**

The paper should be blank and unlined so that the brain can think in a non-linear way, and it should be in a landscape format. According to Buzan, Griffiths, and Harrison (2013), "the landscape view will allow you to express yourself without being constrained by the narrow dimensions of a portrait view" (p.99). Furthermore, when we see wider and taller documents, our brain thinks better (Greene, 2015). This means that the landscape position gives you more space to build the mind map, allowing it to hold more information. Make sure the sheet is big enough to allow for sub-branches.

- **Words**

The mind map begins with a single word that symbolizes the main idea or concept. This primary idea will be expanded to include other terms as sub-details or supporting ideas that are related to the major idea (Mapman, 2013). To create a clear mind map, the word selection should be easy to understand. Furthermore, the mind map should use as few words as possible and minimize irrelevant information.

- **Lines and Shapes**

Lines serve as mind map connections, connecting supporting ideas to the main idea or concept (Mapman, 2013). Lines, in other words, make the mind map clearer and more eye-catching by showing the relationship between the main concern and the sub-branches. Shapes can also be employed with words and thoughts in the mind map to help divide the different linking thoughts (Mapman, 2013). Moreover, they can be utilized to form a group that links and connects all related thoughts in one place. Thus, usinglines and forms when creating a mind map helps your brain in memorizing the information.

- **Images and Symbols**

The mind map is a visual representation of significant thoughts and concepts. Thus, it is critical to use different kinds of images and symbols together with words while creating a mind map (Mapman, 2013). As a result, using images and symbols gives more powerful visual support to the mind map, making the information easier to process and memory.

- **Colors**

Using colors during mind mapping is essential. According to Mapman (2013), the MM should use many colors to group and connect concepts and ideas. Fine-pointed, thicker, or highlighter colored pens is also possible. Our visual memory is better able to work when there are at least three colors present. Buzan, Griffiths, and Harrison (2013) note that "using colors from the start adds structure and vibrancy" in the same context. It enhances your

mental images and stimulates your visual flow (p.99). As a result, designing a mind map using a set of different colors allows the brain to link together associated concepts and ideas.

2.5 Steps of Mind Mapping

According to Buzan (2005, p. 15), creating a mind map is simple; it consists of seven simple steps, which are as follows:

1. The mind mapper will take a blank sheet of paper and begin drawing from the center of the paper, because drawing from the center of the paper allows the brain more flexibility to express itself spontaneously.

2. Use an image as an important idea in the centre of the work because it reflects the nature of the brain's thinking process and imagination and keeps the focus on the main topic.

3. Use colors to make mind mapping more efficient, leading in increased productivity and creativity.

4. The mind mapper should link the big picture to certain branch specifics. These branches are considered the mind map's main branches, with a view of making ideas easier to remember and understand.

5. Use a bowline to connect the branches, rather than an upright or straight line, because these branches will spread like a tree.

6. Use one important word in each branch to stimulate the brain to enhance it into a new concept.

7. Use pictures in branches wherever possible because this forces the brain to use both sides, and each picture is worth a thousand words.

2.6 Structure of Mind Mapping

According to Eppler (2006), in the structure of mind mapping, there is usually a single notion around which pictures, ideas, and phrases are added. As represented in figure (3), the main ideas are closely related to the central subject, whereas supporting ideas are derived from the main one.

Figure3

Structure of a simple mind map
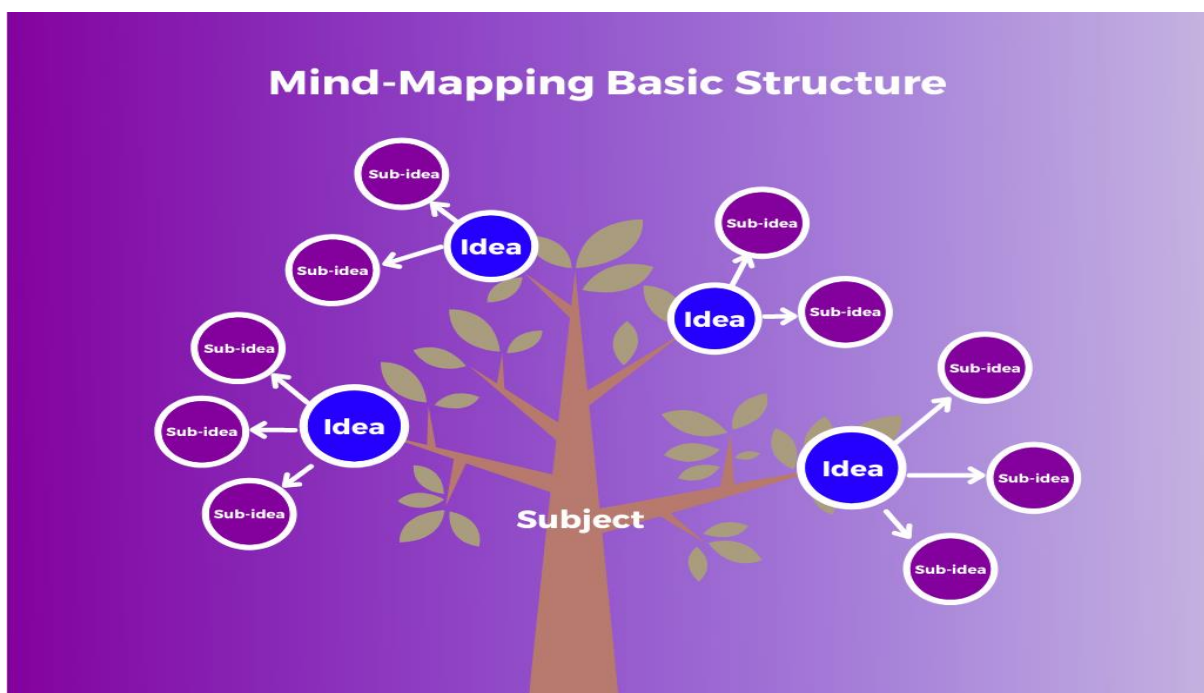
Buzan (1991, in Putranto, 2009) made the case that mind mapping is based on setting a key theme or subject and extracting all the potential connected ideas about it. Also, he provided some considerations for mind mapping creation:

• Determining and demonstrating the relationships and connections between ideas and information generated on the mind map by utilizing lines, arrows, colors, or other chosen means of showing connections. This aids comprehension and retention of new concepts.

• Quickly drawing on unlined paper without halting, judging, or editing. The purpose is to collect all of the options related to the mind map that can be important for a specific issue in a non-linear design because there will be enough time for editing and organizing later on.

• Using different colors to represent different things, and capital letters to write significant ideas because they are easier to read in a diagram.

• Placing the main subject or idea in the center of the page to allow ample space for all of the possible thoughts that can flow from the main theme.

• It is preferable to leave some space on the map for new information that may be forgotten or newly known.

2.7 The Mind Map Laws

When the mind map's different branches spread over the page, it may appear complex and difficult to read. According to Buzan (1994), the mind mapping rules were created for this purpose in order to assist you in producing an orderly, effective, and clear visual representation of your information, which strengthens their influence on the brain. The mind map laws are grouped into two categories: the laws of technique and the laws of layout.

2.7.1 The Laws of Technique

➢ **Use Emphasis**

Buzan (1994) claims that using emphasis throughout the mind map increases memory and creativity. In other words, when we use a primary image, colors, and dimensions, our brain becomes more interested in learning in a creative approach (see figure 4). As a result, you should emphasize images and words in three dimensions by writing or drawing them in three dimensions.

Figure4

Using Dimension in Mind Maps. (Buzan, 1994, p. 98)

Moreover, you should modify the size of the printing to emphasize the relevance of the contents (Buzan, 1994). This means that significant items must be emphasized in large print to increase the probability of their memory (see picture 5).

Figure5

Using Variation in Printing in Mind Maps. (Buzan, 1994, p.99)

Furthermore, the branches of the mind map must be structured using organized space. That is, the branches must be well-organized so that you may classify related thoughts together, making the mind map attractive and ready to include new ideas (see figure.6).

Figure6

Using Organized Spacing in a Mind Map (Buzan, 1994, p.99)
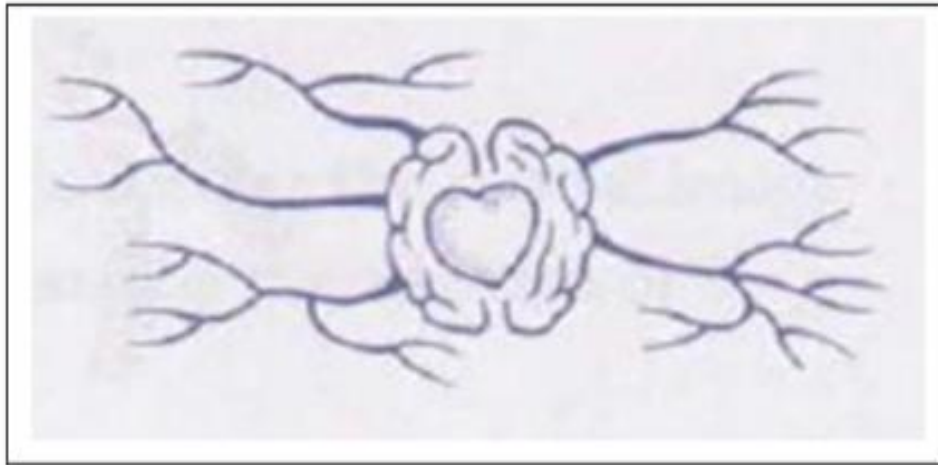
To summarize, concentrate, in all of its forms, plays an important role in the recalling process since it aids memory function.

➢ Use Association

Another key component of the mind map is association, which helps our brain connect the ideas and branches. According to Buzan (2005), "your brain works by association" (p.18). As a result, this description implies that you should connect your branches in order to easily remember information. You should utilize arrows and codes to achieve this. Overall, arrows, colors, and codes make the connection between the mind map's areas visible.

▪ Be Clear

A mind map should have a structured representation that is easy to understand and follow. This demonstrates how mental clarity is stimulated by clarity on paper. As shown in the example by Buzan (1994), "thicker lines immediately signal to your brain the importance of your central ideas" (p.102). In this way, the brain receives a clear signal that the information is significant when thicker lines are used (see picture 7).

Figure7

Characteristics of Using Lines in a Mind Map (Buzan, 1994, p.102)

In conclusion, the rules mentioned earlier must be followed when creating a mind map since they enable you to create a visible, well-organized, and memorable mind map.

2.7.2 The Laws of Layout

In the beginning users must employ hierarchy, which is placing the concepts and thoughts in a logical order. In other words, this law improves memory and the brain. Additionally, it is preferable to number the thoughts in an organized manner when using a mind map for a presentation, speech, or article (Buzan, 1994). This requires that you name the branches in terms of their significance using the chronological order.

- **Use Hierarchy:** When a mind mapper organizes or layouts his or her mind map, he or she has a large influence on how she or he uses it and its functional and practical applicability. Furthermore, the usage of hierarchy and categorization improves brain strength, particularly memory.

- **Use Numerical Order:** the mind map represents the basis for a specific activity, such as a speech, an essay, or an exam answer, it is better to communicate the ideas in a specific order, whether chronological or in order of priority. To employ numerical order, the mind mapper would simply number the branches in the desired

order, even providing appropriate attention or focus to each branch if necessary. Numbers can be replaced by letters from the alphabet.

2.8 Types of Mind Mapping

Tondeur (2007) identified that mind maps can be used almost anywhere, and he listed the following specific forms and uses:

2.8.1 Mini Mind Map

This kind is constructed around a central idea, with many branches extending out from it but no sub branches (Tondeur, 2007). It tends to generate topics based on a single simple idea. For example, to write about global warming, the writer writes the general topic in the middle, then writes the main thoughts that can be derived from it, such as reasons, effects, and solutions, without writing the sub-branches of the main thoughts (Figure 08).

Figure 8

A sample of mini mind map on air pollution
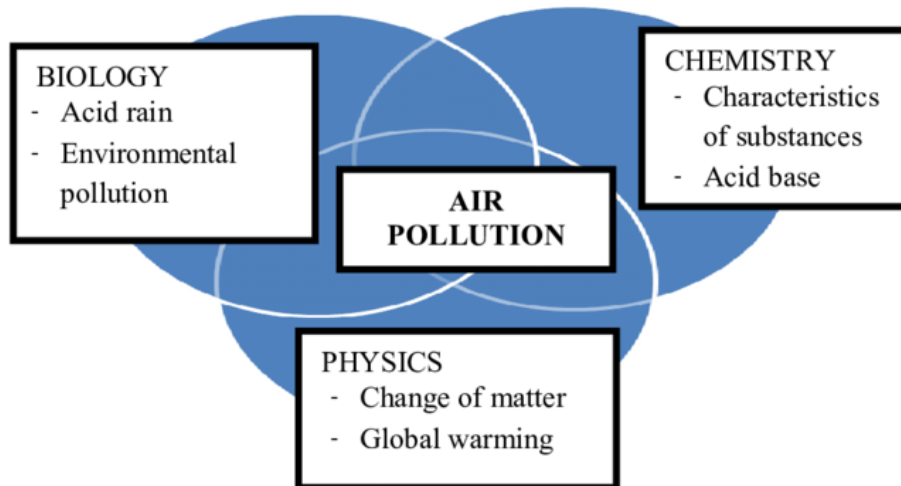
2.8.2 Idea Generation Map

➢ **Idea Generation Map (stage 1):**

According to Tondeur (2007), an idea generating map is a form of brainstorming map in which the writer writes down all of the random ideas that come to mind about a topic. The goal of this map is to derive and write on the document any linked notion, no matter how silly or unnecessary it is. This style is quite useful when the writer is having problems starting the piece of writing. For example, the writer puts in his draft paper everything that has a connection with global warming so that he may easily select and begin the original writing.

➢ **Idea Generation Map (stage 2):**

This type is considered a second or painted version of the initial brainstorming map (stage 1), in which the writer returns to his original draft and takes all of the most significant and main ideas, tries to connect them, and then rewrites them in another map. This type's goal is to organize thoughts (Tondeur, 2007). After writing all of the related ideas about global warming in the first map, the writer selects the most

important ideas and redesigns another map by forming main ideas (reasons, effects, and solutions) and sub-ideas such as: reasons (air pollution, industrial revolution, human activities), effects (nature, environment, and health), and solutions (stop burning, planting trees , and organizing the factors)

2.8.3 Planning

According to Tondeur (2007), a planning map is similar to idea creation (stage 2), but it differs in that it allows the use of other people's ideas, such as those of a friend or a teacher. In this type, the writer takes all of the ideas generated in stages 1&2 and uses them to create a final map that will be turned into a paragraph, essay, or story...etc. This style aims to structure ideas so that the writer can easily turn them into a final piece of writing.

Using global warming as an example, the writer collects ideas in the two stages of concept production, then creates a new ordered map, and then sets it into an assay about global warming.

2.8.4 Note-Taking Map

As Tondeure (2007) claimed, a note taking map can be disorganized or disorderly at first. It is dependent on the writer's level of understanding of the book or topic before taking notes. The aim of this type is to take notes on a book, seminar, or lecture by first writing all of the collected ideas from the sources randomly, then organizing them into a map.

2.8.5 Explanation or Presentation Map

This Type enables the user to easily explain and express his thoughts to others, as well as to himself (Tondeure, 2007). This type allows the writer to communicate and clarify his

thoughts in one page and in visual form, making it easier for the reader or audience to understand the concepts and how they are related to one another.

Mogahed (2013) included some other kinds or forms of visual organizers (mind maps) among them.

2.8.6 Cause and Effect Diagrams

This type is typically used to explain how something occurred (Mogahed, 2013).

Figure9

A Sample of cause and effect mind map on diabetic
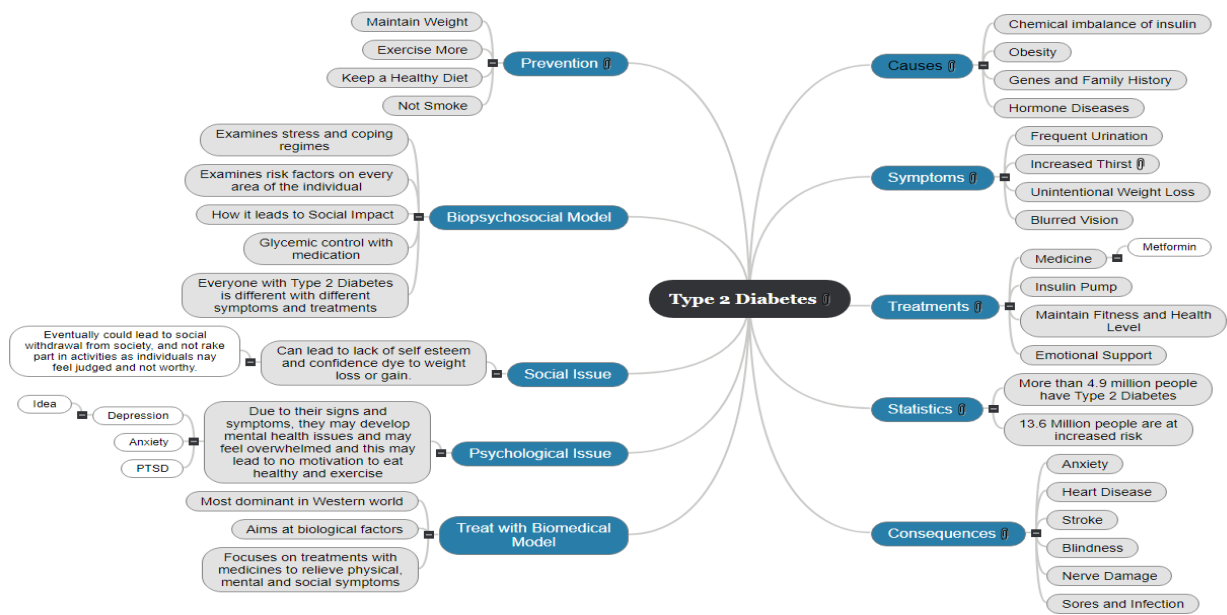
2.8.7 Spider Map

A spider map is used to describe a basic or central concept. That is, this type is based on centering one idea and then extracting sub-ideas from it (Mogahed, 2013) (Figure10).

Figure10

The structure of spider map
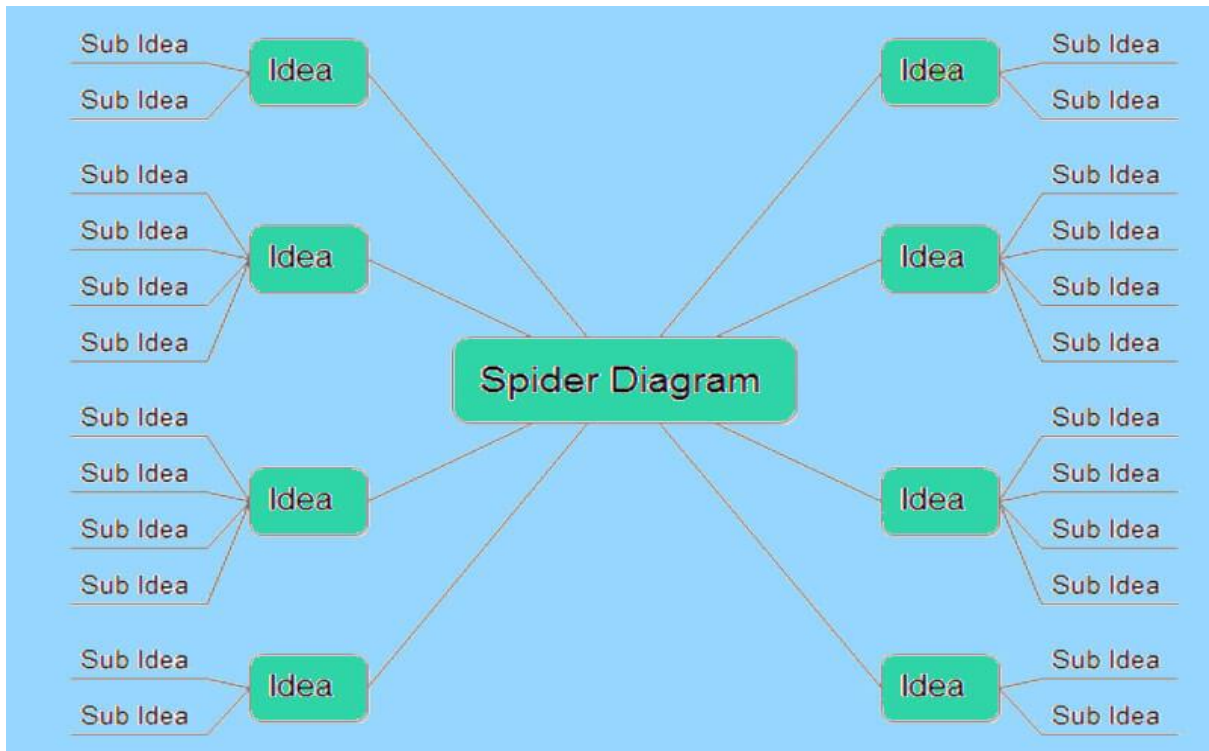
2.8.8 Charts

According to Mogahed (2013), they are useful for expressing directions and categorizing separate thoughts. In the following example of a birthday, the user utilized a chart map to arrange and categorize connected duties and activities around this event (Figure 11).

Figure 11

A Sample of chart map on Birthday

2.8.9 Series of Events Chain

It is used to logically demonstrate the stages of something (Mogahed, 2013).the steps of the water cycle in nature.(See Figure 12).

Figure12

A sample of series of events chain map on water cycle

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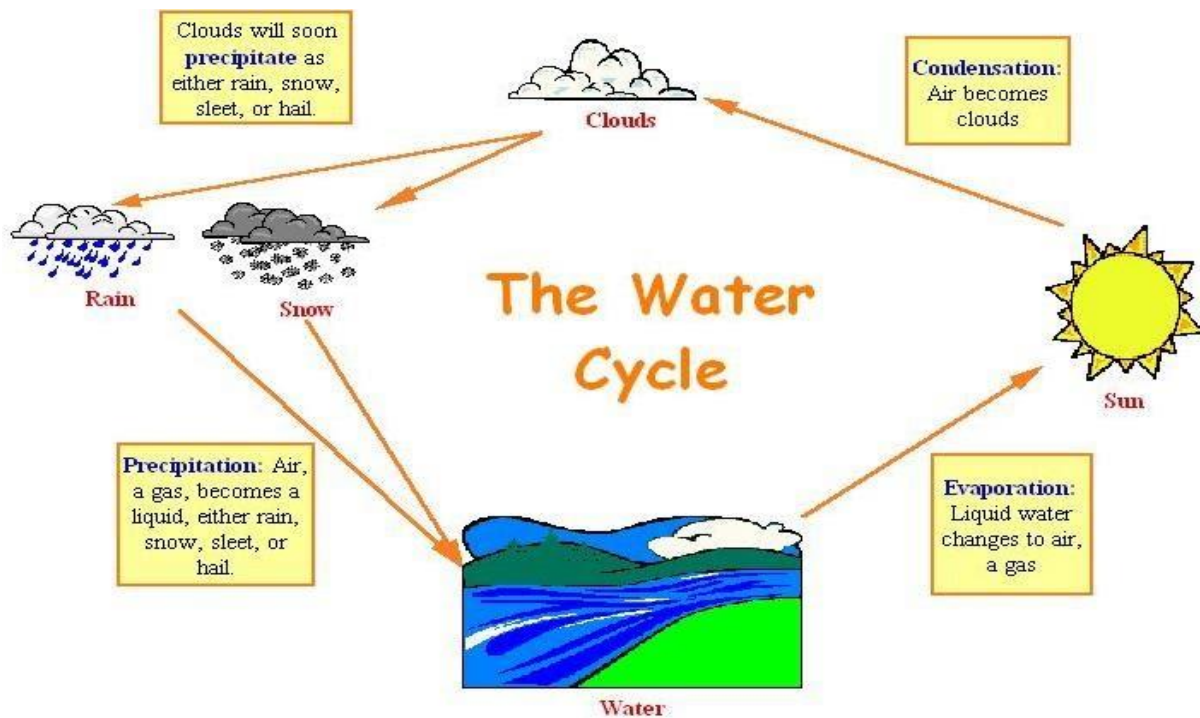
2.8.10 Story Maps

They are useful for describing stories, books, or plays in a personal style that is clear, understandable, and enjoyable, according to Mogahed (2013).

2.9 Reasons to Mind Map

Mind mapping can be used for a variety of causes and purposes. Mind mapping, according to Tondeure (2007), aids in effective communication, concentration, creative thinking, taking notes, organizing thoughts and information, creating creative and new ideas, planning, discovering creative solutions to issues, understanding, remembering, and memorizing. It is also beneficial in the reading and writing processes. Indeed, the mind mapping approach is an excellent tool that benefits both the educational area and all other aspects of life in general.

2.10 Mind Mapping In Education

Education aims to make significant changes in the life of students and teachers. This is accomplished by providing the student with relevant and appealing learning experiences. As a result, the teacher's responsibility is to identify and select appropriate and convenient teaching methods and strategies that can facilitate conveying information to the learner. One of these approaches that can be utilized to improve the learning-teaching process is mind mapping. This new method or strategy can be used in lesson planning, writing, taking notes, preparing or presenting presentations.......... etc.

2.10.1 Planning a Lesson

Preparing a lesson in mind map format allows both the teacher and the learner to keep a constant overview of the entire subject. Furthermore, it enables the teacher to modify and make changes "on the move" to adjust the length of the session as needed. When new

information appears to be significant shortly before the lesson begins, this editing characteristic might be extremely helpful (Buzan, 1994). In other words, the mind map's simple layout makes it easy for the teacher to add more ideas and essential words. Mento (1999) also claims that "mind mapping brings a renewed sense of enthusiasm to the classroom because it tends to increase one's sense of competence in mastering the assigned materials" (p 20,21). In other words, the mind map's visual aspects stimulate and productive both the teacher and the learner in the classroom, which improves their academic achievement. Thus, using mind mapping to design a class simplifies the educator's work and makes lessons and presentations more spontaneous, creative, and enjoyable for both the teacher and the students.

Figure 13

Planning a Lesson Using the Mind Map Technique

2.10.2 Presentations

The mind map offers significant advantages in presentations because it allows the presenter to make more eye contact with the audience, which boosts his/her confidence, and it gives the presenter freedom of movement.

According to Buzan (1994, p. 260), mind maps have many advantages in presentations because they allow the presenter to move freely, increase involvement for both the speaker and the audience, increase eye contact with the audience, and result in a more memorable, effective, and enjoyable performance for both the speakers and the audience. They also allow the presenter to be himself or herself.

In brief, the mind mapper should have a well-organized mind mapping presentation before giving it to others, because this approach will help him/her in making his/her presentation more understandable by the audience when it follows a clear format and structure.

Figure14

Making a Presentation Using the Mind Map Technique
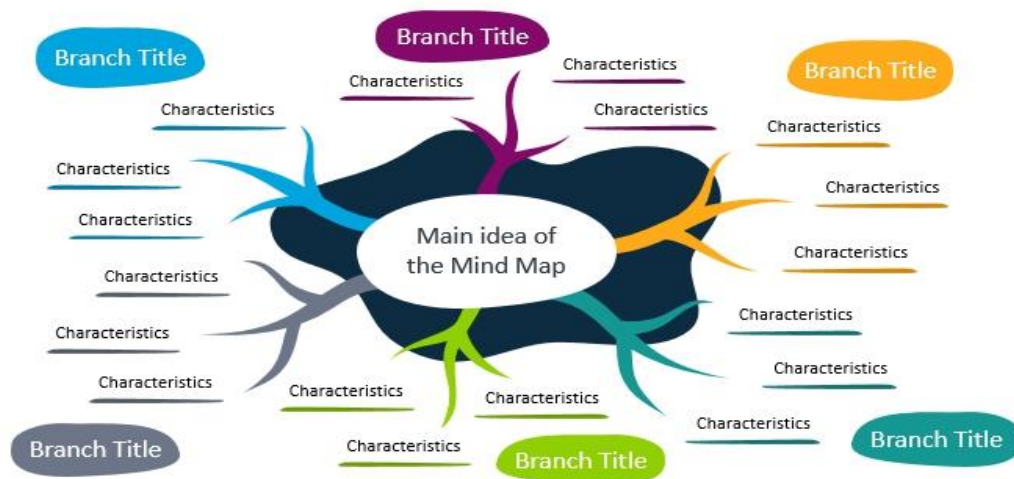
2.10.3 Writing Essays

Mind maps are an instructional technique that helps students in writing well-structured essays. They allow students to examine all of their supporting ideas and arguments, as well as having complete freedom when brainstorming and writing down their ideas. Furthermore, thought maps allow students to generate and add fresh ideas for their essays, as well as examine the logic of the structure and the essay's concepts. In addition, mind maps help students improve their writing skills by increasing their capacity to brainstorm, develop, imagine, and compose well-organized and logical essays. According to Buzan (2005), "mind maps are especially useful because they allow you to see the whole picture of your argument and objectively assess whether your argument and the structure of your essay are logical."

Figure15

Writing an Essay Using the Mind Map Technique
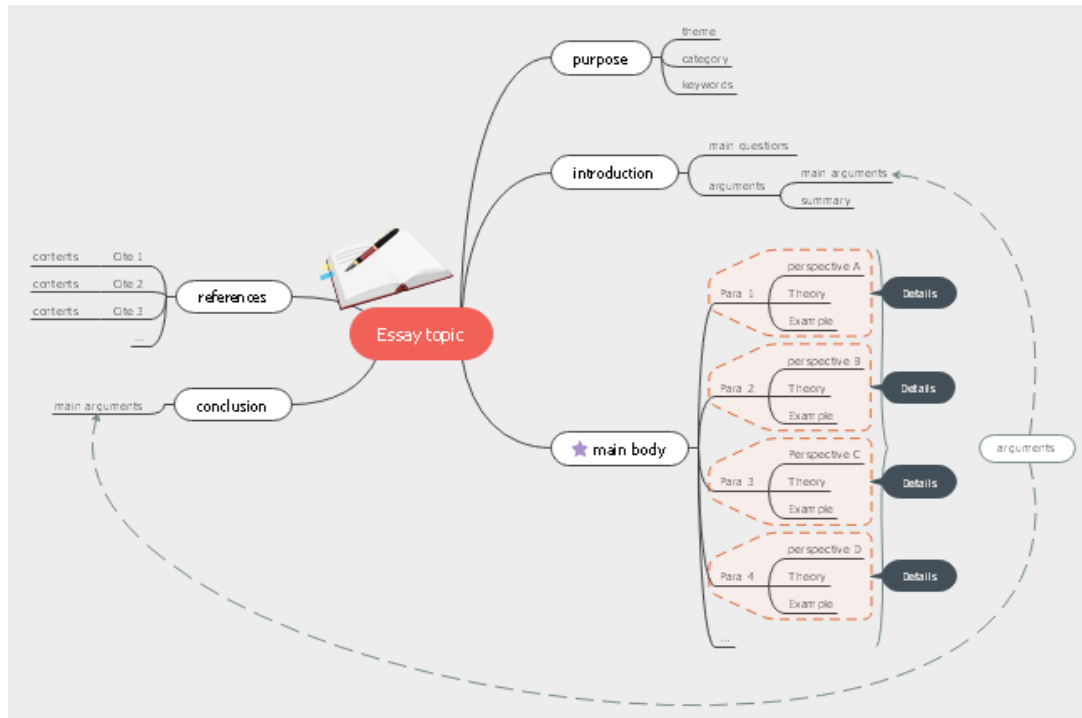
2.10.4 Note-Taking

Learners or students in traditional methods of learning, particularly in note taking, utilize a linear style in which they use only one color, usually blue or black, and only words. However, mind mapping techniques can be employed instead of typical note taking methods, making it a more fun activity for LS who are more creative and productive. They can quickly grasp and retain their notes since merely employing multiple colors and images causes students to recall the material faster than before, because the human brain is divided into two main regions, the left and right lobes, each with its own particular purpose. however, the right brain deals with imagination, colour, dreaming, and other similar activities. (Buzan,1996, p. 94).

Figure15

Taking Notes Using the Mind Map Technique

2.11 Mind Mapping and Technology

With the technological advancements that have touched and served human life in all fields, educators and researchers who are interested in facilitating the teaching and learning process for teachers and LS have also used technology and created computer software's for mind mapping technique.

Mind maps were traditionally created with colored pens and paper; however, with today's technology, mind maps may be created utilizing computers and mobile devices. Many mind mapping software and programs are available, including Xmind, FreeMind, iMindMap, Edraw Mind Map, Nova Mind, MindMeister, and Mind Manager.

Figure16

Example of a brainstorming diagram software- "Edraw Mind Map"
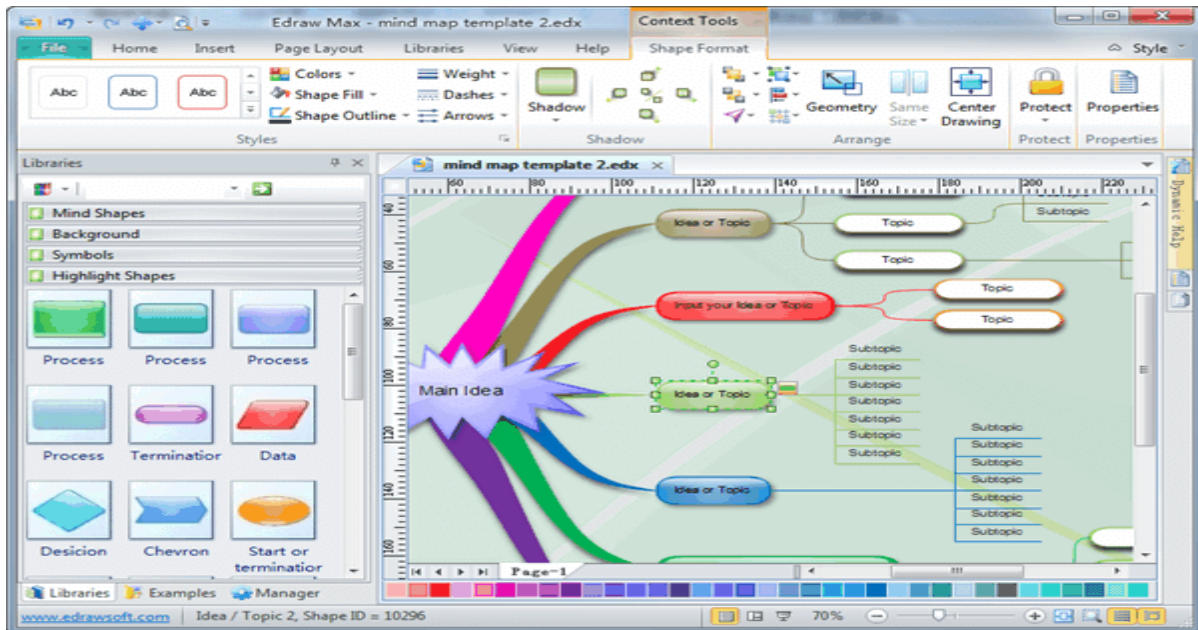
Figure17

Best 10 free Mind Mapping Software of 2023 – EdrawMind
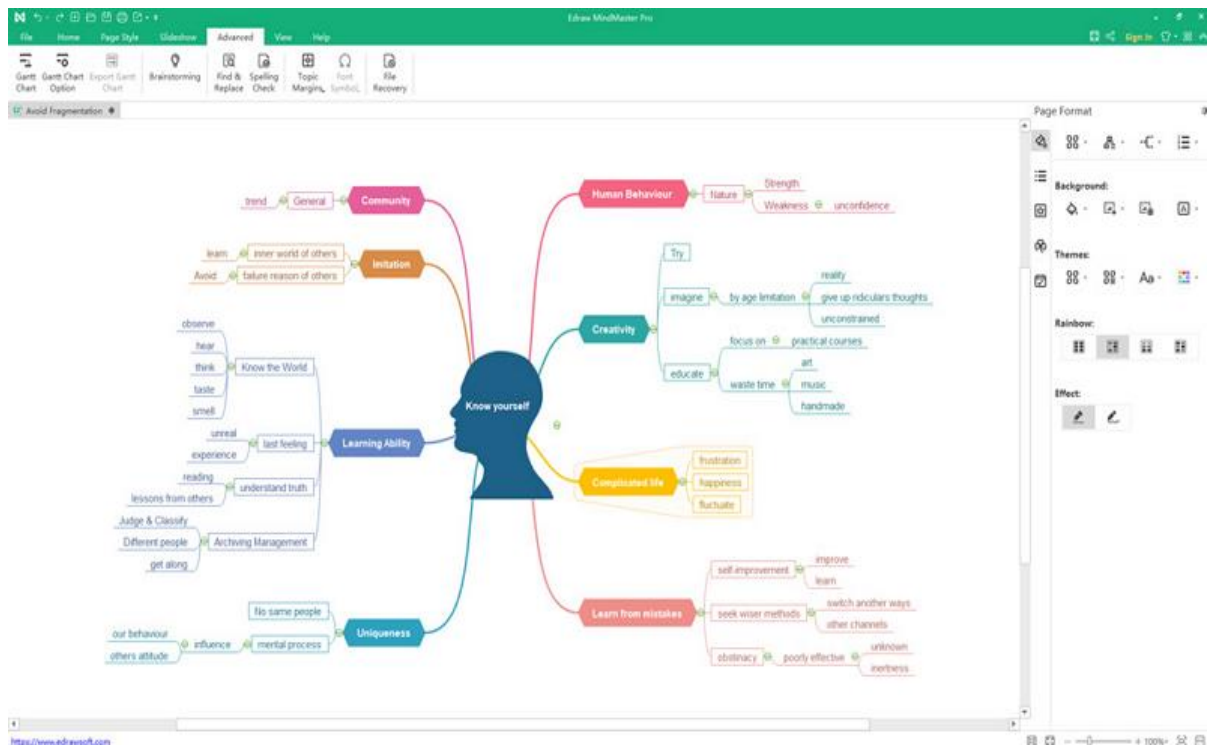
When Lie and Fast (2011) compared traditional mind mapping to digital mind mapping, they discovered that digital mind mapping, which is based on using both mice and

keyboards as input devices, is faster than traditional mind mapping, which uses pen and paper for input. Moreover, using pen and paper to mind map can be difficult for collaboration because participants must work on a single piece of paper at the same time and place. In contrast, digital one user can work on a computer at the same time. Also, unlike pen and paper mind mapping, digital mind mapping supports a clean and consistent look of the content.

Similarly, Dominic (2014) claimed that using mind mapping software is one method for creating a mind map that can let learners change, recolor, and reorganize the map, its nodes, and even its branches. In other words, digital maps are easy to alter, for example, by adding information, deleting it, or changing the color or shape, in contrast to the old method, which takes too much time and work.

In the same vein, Budd (2004) proposed that utilizing images, icons, tags, and other visual aids such as video films in computerized mind mapping is beneficial since it facilitates in connecting concepts in an entertaining way. for example, the ability to include films, MP3, photos, and other media makes the mind mapping process more enjoyable than the old one. In fact, using technology in general can help in the process of teaching and learning, especially given current students' preference for computer technologies.

2.12 Advantages of the Mind Map

The ability to handle amounts of data is extremely important in our educational system, particularly with high school students. Mind maps provide an overview of a topic and its more specifics, collect various concepts and information into one place, and show you where you have been and where you are going (Buzan, 2006).

According to McGriff (2007), mind mapping is an effective tool that helps students in overcoming difficulties in organizing ideas. The format of mind mapping helps students to see all of their ideas in front of them, which aids in the organization of their thoughts.

According to Krasnic (2012), the mind map structure allows for the addition of new information to current knowledge in a flexible and rapid way. That is, students may miss certain elements of a course while taking notes during its delivery. Using the mind map as a note-taking tool allows them to include previously overlooked thoughts. You are able to use not only text but graphics, symbols, and charts in any format (word, power presentation, etc...). Krasnic (2012) adds, "If a picture is worth a thousand words, then a visual map that combines pictures and words is worth several thousand words" (p. 57). This explains the power of a mind map in representing information. According to Buzan (2018), "it also allows you to see the big picture." It is both microcosmic and macrocosmic (p. 13). In other words, the main subject is clearly identified, and the sub-topics of each thought are effectively identified; as a result, the information review is effective and quick.

As a result of this, the emphasis on real issues is increased. Thus, a mind map not only helps students describe concepts in a well-structured format, but it also allows them to separate important information from unnecessary content. Also, according to Buzan (2005), a mind map is "the easiest way to put information into your brain and take information out of your brain" (p.11). This indicates that a mind map is a creative, logical, and an effective tool that "maps out" your thoughts. According to Buzan (2006), students who use mind maps usually say that they feel more confident, that their goals are realizable, and that they are on track to achieve them (p. 136). In other words, students discover that using the mind map approach increases their self-confidence and brings them closer to their goals.

According to Buzan (1995, in Wright, 2006), using mind maps saves time since they allow the use of key terms rather than whole words. He also highlighted different uses for mind mapping, such as recording, remembering, problem solving, and creative thinking (1995, in Wright, 2006). As a result, mind mapping connects and supports all aspects of life.

Mind maps help teachers in adapting their teaching strategies to meet the needs of different learners (Nesbit &Andesope, 2006).

Buzan (1993, pp. 225-228 in Wright, 2006) identified the following benefits of mind mapping:

1) They are ideal when the problem is comprehension instead of writing. (A stage of comprehension before writing.)

2) They support deep opposite surface structure. (They represent different levels of relationships.)

3) They identify wrong connections between ideas.

Relationship between the process of writing and mind mapping

Mind maps work well as their visual design, which allows students to connect the main concept with supporting ideas and encourages them to group specific ideas together as they progress. To begin, students have to share ideas on a certain writing topic when they get new details. Second, by radiating ideas on the topic through mind maps, they can brain storm and extract existing information. Then, using their own understanding and experience, students can create an essay structure. Finally, they may easily create the piece using the mind map as a guide. After students have constructed the essay structure, they can finish it by referring to the mind map. The teaching processes are similar to the procedures described in Figure (18).

Figure 18

Procedures of essay writing with mind mapping
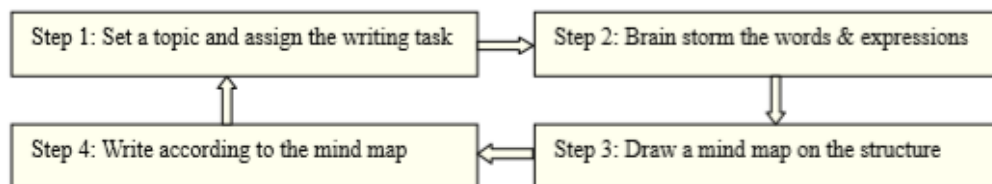
There are a lot of advantages of using mind map technique in writing:

The term mind maps was used first by (Buzan, 1993) when he described it as an instructional strategy where learner "places super ordinate relationship of ideas or concepts on paper and subsequently links subordinate concepts as appropriate".

Buzan also describes mind maps as an excellent way to help learners to express themselves both verbally and visually.

Dawson et al. (2005) believes that mind mapping is a type of prewriting method as the first stage of the writing process. Prewriting helps us to get our ideas on paper, and brainstorm thoughts that we may eventually use in our final writing. Teachers can use this technique to urge students to create and make a mind map before they write to engage their minds and offer them the opportunity to organize their thoughts into an outline that they can use when they begin writing.

Mind mapping comprises writing down a central idea and coming out with new and related ideas from the center. The mind mapping strategy can be used to explore a wide range of topics in writing and also used in every kind of writing such as: narrative, descriptive, persuasive and argumentative (Riswanto & prandika, 2012).

Kales (2012) also claimed that mind mapping can assist learning by providing an opportunity for visual stimuli, assessment, checking understanding, elaboration, note-taking, summarizing, and other creative ways of instruction.

On the other hand, "…mind mapping has been considered by some writers not to be a useful skill. For example, sometimes it could be time consuming for the teacher to present and for the student to grasp, especially if the students is inexperienced or uncreative (Buzan,1993)."

This may be especially true when using this strategy in an exam situation if students are not familiar with the concept of the mind mapping strategy in such conditions. Therefore, it could be said that teachers need to give students plenty of opportunities to practice this strategy before the exam so they can use it in exams effectively.

Conclusion

Mind maps are a mirror of brain activity that is structured in a radiant way since the brain is an incredible organ that can think and remember in a non linear way. Making students creative is essential in today's world. For being creative, especially in writing, the teacher should help the learner by employing different approaches and tools that go hand in hand with the elements that lead to enhance writing proficiency**.**

Practical part

Chapter Two: Data Collection and Findings

Introduction

The current chapter is devoted to the study's fieldwork, where we will test the applicability and efficacy of mind mapping as a learning strategy on students' writing abilities. In order to confirm or disconfirm our research hypothesis that the use of mind mapping by second-year high school students significantly improves their writing abilities with 56 second year foreign languages students from Bouhana Massoud High School. We designed four experimental workshops to help us achieve our goal. This chapter outlines the experiment's purpose before going on to discuss the participants and data collection process The majority of the chapter is then devoted to the description and analysis of the experiment's findings as well as the analysis of the questionnaire which were administered for both teachers and their students for the sake of obtaining data which serve our research to know students' and teachers' point of views about the role of Mind Mapping techniques in enhancing writing. In addition to a conclusion that sums up the main findings of the study. To conduct this research both a quantitative and qualitative data were used. Finally, this chapter ends with a general conclusion which is a summary of the main aims and findings of the study.

Section one: Data Collection

This section contains details about our methodology, participants, data collection instruments, and data analysis processes.

Our variables' functional relationship is one of cause and effect. So, during English classes, we conduct an experiment on second-year students. The approach is pre-experimental and involves two groups. Two cases will be compared with the sample. The

first is before employing the mind mapping approach (pre-test), and the second is after it has been implemented (post-test). Thus, a questionnaire and the use of mind mapping are the methods used in our study.

I. Participants

We selected a random sample of (56) second-year high school students at Bouhana High School (Ferdjioua) for the academic year 2022/2023.

The reason for working with second year students is because they are still young students who require ways to make learning easier and more effective, especially in writing the questionnaire was given to two groups of foreign languages students.

II. Aim of the experiment

The aim of the experiment is to determine whether using the mind mapping technique helps learners improve their writing abilities. Additionally, it attempts to evaluate students' writing progress by comparing and contrasting their paragraphs on the pre- and post-tests, which they are employing a mind map format and a linear format, respectively. Furthermore, the objective is to increase students' understanding of the importance of this technique in improving their writing abilities.

III. Tools of Research

As the nature of the study is experimental, it required the use of questionnaires, and test paragraphs (pre-posttest) preceding and following the training program respectively.

1 .Questionnaire

According to Wilson and McLean (1994, cited in Cohen, et al., 2000, p. 377),"the questionnaires a widely used and useful instrument for collecting survey information,

providing structured, often numerical data, being able to be administered without the presence of the researcher and often being comparatively straightforward to analyze".

The students' questionnaire tool utilized in this study intends to collect information about our participants prior to the application of mind mapping. It consists of twenty one (21) questions ranging from open-ended to closed-ended to multiple choices.

The questionnaire is divided into three sections, the first of which is titled "General Information." It consists of three questions designed to gather general information about our participants (years of English study, whether they prefer English, etc…). The second section is titled "writing process," and it consists of nine questions designed to elicit information on students' attitudes toward writing. The third comprises ten questions about "Mind Mapping" (if students arrange, plan, and brainstorm their thoughts before writing or not, whether they know about mind mapping or have used it before, etc…).

2. Pre-Test Paragraph and Post-Test Paragraph

We have adopted pre- and post-testing to help us reach the objective of our study.

Pre-Test Paragraph:

It is an initial investigation designed to collect information on the participants' writing abilities before the implementation of the mind mapping approach. The participants were instructed to compose a paragraph of 10 to 15 lines about a free topic in the first session of the experiment. This was held on May 2nd, 2023 at 10:00 a.min room 13 with the first group, then on May 3^{rd}at 14:30 am in room 14. All of the students' paragraphs were collected on the same day.

Post-Test Paragraph:

It was used to determine the students' writing proficiency following the introduction of the mind mapping approach in the classroom and was implemented at the conclusion of our investigation. In the final session of our experiment, the students were instructed to create a thought map first, and then write a paragraph on the same free topic they had previously selected. It will be discussed on May 8th, 2023 from 9:00 to 10:00 in room 13and with the second group from 14:30 to 15:30 on May 10th, 2023 in room 14.

3. Review about the experiment

It intends to collect data on students' perceptions of the mind mapping approach once it has been implemented .we ask about the students' and teachers' opinions of mind mapping, and a their opinions also about the technique of mind mapping .

4. The Training Program

The experiment is based on 5 sessions. We first started with a pre-questionnaire, which was conducted to measure learners' abilities before the treatment. At first, we briefly described the nature of our experiment to the students and explained to them its aim and procedures. In the first session, we provided students' with information about the process of writing, and at the end of the session, we asked them to write a paragraph about a topic of their choice. In the second session, we introduced the strategy, the mind mapping strategy, which aims at encouraging the students to plan before starting to write and organize their ideas. Ten minutes were given for the students to draw a mind map for each specific topic, and after the ten minutes, the mind mapping sheets were picked out. Also, we taught the students how to use this planning technique. In the third session, we used the mind mapping

technique to write a paragraph about two different topics. In the fourth session, we asked the students to write a paragraph about the same topic that they had chosen before, but using the technique of mind mapping. In the fifth or last session, we gave them a short post-questionnaire to find out what they think of this experience, if they enjoyed and benefited from it, and whether they will use it in further writing performances .

IV.   . Data Collection Procedures

We distributed the questionnaires on the beginning of our first training session on May 2nd and 3rd. The rest of the sessions we implemented the experiment. The experiment lasted two weeks (3 to 4 sessions a week) from Sunday, 2 nod may to Thursday, 10th may. The first week we had four sessions, the first one was on Tuesday from 10:00 am to 12:00 am with the first group and on Wednesday from 14.30 to 15.30 am with the second group. The last session took place on Thursday from 09:00 am to 10:00.a.m with fist group and from 13:30 to 14:30 with the second group. The second week, we had three sessions with each group .The first one was on Sunday from 08:00 am to 09:00 am with the group one .On Monday we had a session from 08:00 am to 09:00 am with the group two and as a second session with the group one from 09:00 to 10:00. The third session and the last one with the group one was on Tuesday from 10:00 am to 12:00 am, and as a second session for the group two on Wednesday from 14:30 to 15:30 .The third and the last session with the group two was on Thursday from 13:30 am to 14:30 .The duration of each session was 60 minutes and all the sessions took place in room 13 and 14. In the last session, on May $9^{th}$and 11, we gave students a post-questionnaire about the experience of the use of mind mapping on their writing pieces relying to what we dealt with in the experiment.

V.   Data Analysis Procedures

The data from the pre and post- tests, as well as the students and teachers questionnaires, were evaluated using a comparative method. To analyze our statistics, we relied on the number of students and percentages. In terms of qualitative data, we evaluated students' paragraphs. The students' paragraphs were described in the textual analysis. It is based on the maps they made before writing.

Section Two: **Discussion of the findings**

1. **Students' Questionnaire**

1.1. **Description of the Students' Questionnaire**

The students' questionnaire consists of 21 questions grouped in three sections; which addressed to 56 students. The first section (Q1- Q2- Q3) 'Background Information' represents basic information about students such as: the reason behind choosing to study foreign languages, how many years they have been learning English, and if they like to be a learner of English. The second section (Q4-Q12) 'Writing Process' it sets to measure the awareness of mastering the writing skill. The third section (Q13-Q 21) 'Mind Mapping' is designed to find out if the students are familiar with this term and if they used this technique while writing, and if it helps them to overcome the problems that face during the writing process. The questions are mixture of close-ended questions which respondents are required to answer with (yes or no) or to tick the appropriate answer, and open-ended questions in which they justify their answers or give their opinions.

1.2. **Aim of the Students' Questionnaire**

The major aim behind this questionnaire is to check the effectiveness of mind maps technique on students' writing abilities and whether they apply it during their writing or not.

1.3. **analysis of students' questionnaire**

Section One: Background Information

Q01: You choose to study foreign languages because it was:

Table 01

Students' responses about the reason behind choosing to study foreign languages

Options	Participants	Percentages
Your personal choice	35	62.5%
Parent's suggestion	3	5.35%
An obligation	18	32.14%
Total	56	100%

This questionnaire aimed to know the students' reasons behind choosing to study foreign languages. The above table shows that the majority of learners (62.5%) choose to study foreign languages because it was their personal choice. (32.14%) of them said it was an obligation. The rest (5.35%) of learners answered with parent's suggestion. Those data insured that high school students are responsible to make decisions for them, while sometimes they need the help of others like their parents. Also, here the one who answered with' an obligation' perhaps it's due to their averages.

Q02: How long have you been learning English?

Table02

Student' learning experience of English language

Options	Participants	Percentages
6years	25	44.64%
More than 6 years	31	55.35%

Total	56	100%

This questionnaire was designed to determine the period of time spent on learning English. (44.64%) of students have opted for 6 years. This indicates that those participants are at the normal level, well they start counting the years from the middle school. The rest (55.35%) said more than 6 years was their relation with the English language; maybe they repeated the years or study in private schools.

Q03: Do you like being an English language learner?

Table03

Learners' point of view about being an English language learner

Options	Participants	Percentages
Yes	32	57.14%
No	24	42.85%
Total	56	100%

This question had a relation with the first one, but this one was more specific to learners to share their point of view freely about being an English language learners. (57.14%) of students chosen 'yes', which means that most of them are highly motivated to learn English. While (42.85%) said 'no', those ones are normally administratively oriented to study it.

Section Two: Writing Process

Q04: How could you describe your level in English language?

Table 04

Students' level in English

Options	Participants	Percentages
Good	13	23.21%
Average	32	57.14%
Weak	11	19.64%
Total	56	100%

According to results in table04, the majority of students (57.14%) said that their level is average which indicates that students are still beginners. (23.21%) of students have said that their level is good means that those members had a good knowledge about the basic of this language. The rest opted for weak, so they need more help with a lot of effort to develop their level.

Q05: which of the following skills do you usually focus on while studying English?

Table 05

Students' perception about their mastery of the four skills while studying English

Options	Participants	Percentages
Speaking	20	35.71%
Writing	15	26.78%
Listening	13	23.21%
Reading	3	5.35%

All of them	5	8.92%
Total	56	100%

As indicated in table5, (35.71%) of participants indicated that speaking is the most important skill in which they focus on it while learning English. This implies that learners found it the easiest one among other skills which needs hard work. (26.78%) of them chosen writing, (23.21%) said it was listening, and only (5.35%) answered reading maybe the only ones who interested in this skill. There is an exception where (8.92%) of learners choose the four skills together, which means they focus on both product and process skills in order to learn the English language.

Q06: Do you think that writing is an important language skill in learning English?

Table 06

Students' point of view about the importance of writing skill in learning English

Options	Participants	Percentages
Yes	48	85.71%
No	8	14.28%
Total	56	100%

The question aimed to know how much the writing skill was important according to those learners. The majority of learners (85.71%) answered with yes. (14.28%) said no. most of them were familiar with the importance of that skill while the rest may be were not interesting to acquire this skill at all.

Q07: How often do you enjoy writing in English?

Table 07

Students' ability toward writing

Options	Participants	Percentages
Always	27	48.21%
Sometimes	17	30.35%
Rarely	6	10.71%
Never	6	10.71%
Total	56	100%

When students are asked about the frequency of practicing writing, half of them (48.21%) said always. This indicates that those ones write everywhere perhaps in their free time also, so they were interested to writing. (30.35%) of participants answered with sometimes, this indicates that they only write when it is necessary for instance, when their teachers ask them to write. Few students (10.71%) opted for rarely and the same member chosen never, they do not care about enhancing their writing skill.

Q08: How do you feel when your teacher asks you to write a piece of writing?

Table 08

Students' feeling toward writing

Options	Participants	Percentages
Comfortable	32	57.14%
Anxious	24	42.85%
Total	56	100%

More than a half of learners (57.14%) feel comfortable when asked by their teacher to write, while 24 of them they feel anxious. This indicated that majority were aware about their writing while others may be they face the writing skill difficult.

Q09: Do you find writing in English difficult?

Table 09

Students' views about writing

Options	Participants	Percentages
No	24	42.85%
Yes	32	57.14%
Total	56	100%

As we see in table 9.(32)of our informants claimed that they found writing in English difficult. Others (24) of them said the opposite.

Q10: Which of these factors affect your writing?

Table 10

Students' difficulties in writing

Options	Participants	Percentages
Anxiety	8	14.28%
Lack of vocabulary	25	44.64%
Lack of practice	8	14.28%

Fear of making mistakes	15	26.78%
Total	56	100%

Normally this question was addressed only to the ones who answered with yes in the previous question, the ones who had problems with writing. But it does not matter because when it comes to write everyone had a problem. (44.64%) of students had problems with vocabulary; (26.78%) had problems with fear of making mistakes. The left and the same percentages said that they had problems of anxiety and practice. This indicates that those learners need help to overcome those problems without neglecting the teachers' role here.

Q11: Does your teacher help you while writing?

Table 11

Rate the teachers' demand on the writing skill

Options	**Participants**	**Percentages**
Yes	40	71.42%
No	16	28.57%
Total	56	100%

The above table showed that most participants (71.42%) answered with yes; means the teacher played an important role in learning and acquiring the writing skill. (28.57%) of learners said no, their teachers do not help them while writing.

Q12: Writing is a process made up of stages, which one is the most difficult?

Table 12

Students' difficult stage in the writing process

Options	Participants	Percentages
Pre-writing	23	41.07%
Drafting	17	30.35%
Post-writing	16	28.57%
Total	56	100%

The results showed that (41.07%) of learners found the pre-writing or planning stage the difficult stage in the writing process. (30.35%) of learners opted for the drafting stage as the hardest one when writing. The left member 16 of learners had chosen the post-writing stage. The data showed that learners need more practice for each stage in order to acquire it. Especially for the first stage which about gathering information and ideas in order to start your work. Teachers also here should apply the process approach that works with steps and stages.

Section Three: Mind Mapping

Q13: Are you familiar with the term 'mind mapping'?

Table 13

Students' acknowledgement about mind mapping

Options	Participants	Percentages
Yes	31	55.35%
No	25	44.64%

Total	56	100%

The data presented in the table 13 indicates that a considerable number of students, about (55.35%) were familiar with mind mapping technique. Maybe their teachers use it while teaching them writing. Others (44.64%) said no they do not know it.

Q14: If yes… do you apply this technique while writing?

Table 14

Students' views about the application of mind mapping while writing

Options	Participants	Percentages
Yes	21	67.74%
No	10	32.25%
Total	31	100%

This questionnaire was related to the previous one which addressed to only 31 of students, the ones who was their answers they were familiar with the term mind mapping. According to the data 21 students out of 31 applied this technique while writing, and 10 of them said no, they do not use it while writing. This means that the one who know its importance used it the opposite.

Q15: Do you think there is a relationship between the writing skill and mind mapping?

Table 15

Students' views about mind mapping and writing skill relationship

Options	Participants	Percentages

Yes	45	80.35%
No	11	19.64%
Total	56	100%

Concerning the relation between mind mapping and writing skill, the majority of students (80.35%) said that there is a relation between those two main concepts, while (19.64%) said there is no relationship between them. This answers indicate that mind mapping help those members in writing, maybe it increases their motivation towards writing.

Q16: Have you ever tried to practice this strategy by yourself before?

Table 16

Students' application of the strategy

Options	Participants	Percentages
No	33	58.92%
Yes	23	41.07%
Total	56	100%

The aim of this questionnaire is to investigate the teachers' role in applying this technique while writing. More than a half of students (58.92%) answered with no. So they do not apply this technique by themselves. They need the help of their teachers or they use other techniques during their writing. The left students said yes they use this technique before so those are master the usage of that technique.

Q17: How do you mind map?

Table 17

Students' way of mind map

Options	Participants	Percentages
Draw	10	17.85%
Plan	11	19.64%
Use key words	17	30.35%
Write the main ideas	18	32.14%
Total	56	100%

The table' results showed that students use several ways in order to mind map. (32.14%) of students preferred to write the main ideas, (30.14%) of students used key words. The rest choose either to plan or draw during their mind mapping.

Q18: Do you use technology to mind map effectively?

Table 18

The use of technology while mind map

Options	Participants	Percentages
Yes	29	51.78%
No	27	48.21%
Total	56	100%

The above table shows that slightly more than the half of students (51.78%) responded with yes, this indicates that technology was helpful in mind mapping. (48.21%) of

respondents said no they do not use technology, perhaps they do not experience it before and they should be aware of its importance.

Q19: Mind mapping is important in the writing process?

Table 19

Mind mapping as an important tool

Options	Participants	Percentages
Strongly agree	14	25%
Agree	31	55.35%
Disagree	11	19.64%
Strongly disagree	0	0%
Total	56	100%

The majority of learners (55.35%) agree with the statement that mind mapping is important in the writing process. (25%) of students were strongly agree, while the rest (19.64%) disagree. The result proves and asserts the efficacy of mind mapping technique.

Q20: Do you think that following mind mapping techniques would help you produce better ideas?

Table 20

Students' opinions about using mind mapping technique to produce better ideas

Options	Participants	Percentages
Yes	49	87.5%

No	7	12.5%
Total	56	100%

The answers provides here, as we see in the above table, (87.5%) most learners claim that the following mind mapping technique would help them produce better ideas. While (12.5%) of students said the opposite.

Q21: Do you think that the use of mind mapping is time consuming?

Table 21

Students' perception about the thought that creating mind maps is a time consuming task

Options	Participants	Percentages
Yes	7	12.5%
No	49	87.5%
Total	56	100%

Most learners answered with no, mind mapping was not a time consuming. With enough experience and practice mind mapping would be time saving. The rest (12.5) of students said yes it was a time consuming; this can be true in an exam situation where is time limited with lack of experience.

Q22: how do you rate your writing performance after mind mapping?

It was an open-ended question which aimed to know students' point of view about how they rate their writing performance after the use of mind mapping techniques. A considerable number of students (23) said 'good', while the rest answered with numbers out

of ten from 1 to 7. Students were aware and familiar with the use of mind mapping techniques.

2.   Teachers' Questionnaire

2.1 Description of the Teachers' Questionnaire

Teachers' questionnaire consists of three sections, which delivered to five teachers. The first section (Q1-Q3) 'Background Information' includes general information about the informants, their grades, years of teaching experience and their specialty. The second section (Q4-Q8) is designed to investigate teachers' opinions about the writing skill and its aspects. The last section (Q9-Q14) is devoted to discuss the application of the mind maps technique in the classroom. The questions are a combination of close-ended and open-ended (in case of explanation or further suggestions).

2.1.   Aim of the Teachers' Questionnaire

The teachers' questionnaire is done to investigate the influence of the mind mapping technique on advancing students' writing skill proficiency. Also to what extent do teachers apply this strategy in their classes to develop learners' writing abilities?

2.3 Analysis of the teachers' questionnaire

Section one: Background Information

Q01: What is your qualification?

Table 22

Teachers' qualification

Options	Participants	Percentages
License	1	20%
Magister/master	4	80%

Doctorate	0	0%
Total	5	100%

The majority of teachers (80%) have the magister or master degree, while one teacher has license degree, and no one of them have the doctorate degree.

Q02: how long have you been teaching at the higher level?

Table 23

Teachers' Experience

Options	Participants	Percentages
Less than 5 years	2	40%
More than 5 years	3	60%
Total	5	100%

This question aims to know the teachers' experience. From the table above, three teachers have a long experience in teaching English at high school. The two teachers were less experienced because they teach for less than 5 years. The teaching- learning process has several difficulties that should take into account.

Q03: What is your specialty?

Table 24

Teachers' Specialty

Options	Participants	Percentages

Didactics	5	100%
Linguistics	0	0%
Civilization	0	0%
Total	5	100%

Here the data indicates that all teachers (100%) are specialized in didactics. This implies that all teachers are specialized in the field of how teaching-learning process occurs.

Section Two: writing process

Q04: How do you find teaching writing?

Table 25

Teachers' Views towards Teaching Writing

Options	Participants	Percentages
Easy	0	0%
Challenging	5	100%
Difficult	0	0%
I do not teach writing separately	0	0%
Total	5	100%

The five teachers have the same answered which is challenging, perhaps because they do not teach writing separately as a module in isolation.

Q05: Do you find challenges in your classroom while teaching writing?

Table 26

Teachers' thoughts about their classroom level in writing

Options	Participants	Percentages
Yes	5	100%
No	0	0%
Total	5	100%

(100%) of teachers face challenges in their classroom while teaching writing. Here are a number of those challenges that listed by teachers.

- Students' lack of vocabulary.

- Time consuming.

- Difficulty in managing the class and correcting their work in time.

- Students face many difficulties when it comes to writing especially in terms of accuracy.

- How to convince students that writing is not as difficult as they imagine.

Q06: How do you rate students' writing ability?

Table 27

Teachers' appreciation of students' writing ability

Options	Participants	Percentages
Good	0	0%
Average	3	60%
Poor	2	40%

Total	5	100%

The results indicate that (60%) of teachers have considered their learners' level in writing is average in general. This implies that the majority of teachers were not satisfied with their learners' writing ability. Two teachers have seen students' level in writing poor and none of them have seen it is good, means that learners need more practice and efforts in order to improve their writing.

Q07: Which approach do you follow when teaching writing?

Table 28

Approaches to teaching writing

Options	Participants	Percentages
The product approach	2	40%
The process approach	3	60%
The genre approach	0	0%
The process-genre approach	0	0%
Total	5	100%

Three teachers follow the process approach in teaching writing. So, they like to teach their learners through stages. Two of them follow the product approach, those ones preferred to follow the traditional way of teaching. None of them choose the two other approaches.

Q08: Which type of assessment do you follow when correcting students' writing?

Table 29

Teachers' type of assessment when correcting writing

Options	Participants	Percentages
Self-assessment	1	20%
Teachers' assessment	2	40%
Both	2	40%
Total	5	100%

When asked teachers about the type of assessment they follow when correcting students' piece of writing, two of them opted for teachers' assessment, because they like to present their role to judge their learners' work. One of them opted self-assessment, and the other two choose both types, means both are important to enhance learners' writing proficiency.

Section Three: Mind Mapping

Q09: Do you use mind mapping while teaching?

Table 30

Teachers' using to mind mapping while teaching

Options	Participants	Percentages
Yes	4	80%
No	1	20%
Total	5	100%

(80%) of teachers said they apply the mind mapping technique while writing, only one of them said no because of time shortage. Here number of reasons why the use of this technique is important according to them.

- It helps learners to understand things in an easy and enjoyable way.

- It facilitates writing.

- Mind mapping is essential when it comes to prepare delivering a lesson properly in the class.

- It facilitates students understanding and production.

Q10: Do you think that mind mapping technique would help students develop their ideas easily?

Table 31

Teachers' thought about the use of mind mapping in helping students develop their ideas in an easy way

Options	Participants	Percentages
A lot	5	100%
A little	0	0%
Not at all	0	0%
Total	5	100%

According to the results in the previous table, all teachers choose the first option in which they think that mind mapping technique would help learners to develop their ideas in an easy way.

Q11: What type of mind mapping do your students use?

Table 32

Mind maps' type used by students

Options	Participants	Percentages
Drawing	3	60%
Planning	1	20%
Using key words	1	20%
Total	5	100%

From five teachers, three of them said that their students usually use drawing while mind mapping since they are still young learners. One of them answered by planning, and the last one said that his/her learners prefer to use key words while mind mapping.

Q12: Have you encouraged your students to use mind mapping techniques while writing?

Table 33

Teachers' encouragement to use mind mapping techniques while writing

Options	Participants	Percentages
Always	4	80%
Sometimes	1	20%
Never	0	0%
Total	5	100%

Four teachers said that they always encourage their learners to use mind mapping technique in writing, and one of them said only sometimes encourage their learners to use it.

Q13: To what extent does mind mapping help students organize their writing?

It was an open-ended question which aims to know to what extent this technique help students organize their writing. According to the teachers mind mapping:

- Helps students to a large extent.

- It helps students be organized, set their ideas to the right order which can help them expand the writing piece to be more creative.

- It was a time saving technique where students can start writing according to the plan rather than rumbling around.

- Organizing is one of the key elements in any piece of writing and when we address organizing we should select mind mapping, simply when you draw or make a plan about the topic you are going to talk about it your writing would be organized easily.

Q14: Do you encourage your students to use technology in order to mind map appropriately?

Table 34

Teachers' encouragement to use technology in order to use mind map appropriately

Options	Participants	Percentages
Yes	5	100%
No	0	0%
Total	5	100%

The results indicate that technology was very important in order to mind map appropriately and increasing writing proficiency at the same time.

Q15: this question is designed for further information about this topic. Only one teacher add further information, and he/she said that mind mapping is really important; if students are really well informed by it, they could write better and stop their anxiety towards writing.

3.   Discussion of the Main Results from Students' and Teachers' Questionnaire

This part links the two chapters together, it sheds light on the results which obtained from both teachers' and students' questionnaires. It aims to answer to the research questionnaire and confirm or disconfirm the hypothesis.

From the analysis of students' questionnaire we found important results about the mind mapping technique and its role in enhancing students' writing proficiency. Most students have an average level in English that can be enhanced through practice and a lot of efforts. In second section which is about writing skill, writing was considered as a difficult process specially the first stage (the pre-writing stage). Students face some difficulties when writing in English language, but even that mostly enjoy writing in English. They are aware of enhancing their level and aware of the importance of this skill in their career and especially they are still beginners and foreign language learners at the same time. In section number three which is about mind mapping techniques, learners are familiar with this technique but they do not know how to apply it during writing appropriately; They encouraged by their teachers to use it in their writing. Students should be aware of the new techniques that help them while studying. The students' answers confirm to us that mind mapping influence students' writing proficiency and give the answer to the research question.

The teachers' questionnaires analysis also revealed some important results concerning the relation between the two variables. It was true that in high school there is no specific module which deals with writing in isolation, but teachers' experience in teaching the English language makes them more reliable in answering those questions. All teachers are specialized in didactics that deals with teaching-learning process and that was beneficial. According to

those teachers member the writing skill was very important in learning English language but it hard to acquire it at the same time. Teachers advice their learners in order to overcome the challenges that face them while learning or teaching writing to use mind mapping techniques because teachers consider mind mapping as a contributing factor to enhance students' writing proficiency. So the second research question was answered.

4. The analysis and discussion of the students' paragraphs

4.1 Pre-Post Test Paragraphs

This part compares the results obtained from the analysis of the students' paragraphs before and after the experiment.

Figure (19), represents students' work in the pre-test paragraph before using mind mapping strategy and the post-test paragraph after implementing the mind mapping strategy Then ,we find some examples of students' paragraphs before and after using mind mapping .

4.1.1Analysis of the pre –test

An analysis of the students" performance in the pre-test was carried out in order to examine the improvement of students" writing skills .In the pre-test all the students used the note-taking method or they wrote the main ideas about the topic they chosen. Additionally, most of their paragraphs were disorganized, chaotic, and unclear, making them difficult to understand. Worse, one student did not even write anything and gave us an empty piece of paper. Furthermore, a few students did not write anything until they got a second chance. Moreover, certain students wrote simply their main ideas related to the topics and a few separated words. As well, they wrote down much unnecessary information in an unstructured manner, making them unappealing to the eye and difficult to read. Also, others created simply one chaotic and disorganized statement summarizing the main concept of the topic.

However some students mixed the topic's necessary points, making it difficult to read, and they did not give enough space to add missing details or ideas while trying or thinking about the topic. We may conclude from the gathered data that students only used traditional methods to memorize more information about the topic. However, several of them jotted down a lot of irrelevant information. Therefore, their paragraphs were unorganized and messy (see Appendix C). A concrete example of students" paragraphs in the pre-test is the following.

Figure 19:

An Example of Students 'paragraphs in the Pre-test

I write about bullying

- Bullying is the use of force, coercion hurtful teasing or threat to abuse aggressively dominate or intimadate The behavier is often repeated and habitul. one essential prerquistie is the percepition (by the bully or the others) of an imbalance of physical or social power . this imbalane disinguishes bullying foram conflict.
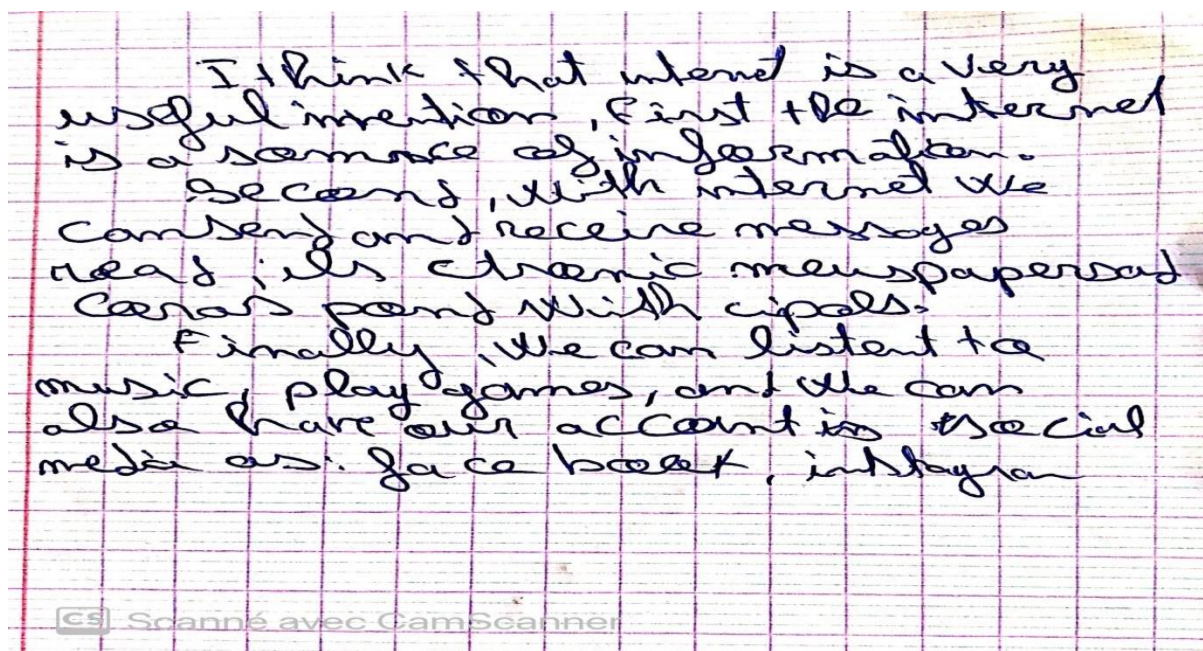
Moreover, according to an analysis of the students' paragraphs according to the criteria as follows (see table 35 below), most of them were able to write relevant paragraphs related to the topics and used correct English. Few students were able to write coherent paragraphs that used excellent vocabulary and creativity.

Table 35:

Students' criteria in the Pre-test

criteria	relevance	Semantic coherence	Correct use of English	Excellence (vocabulary and creativity)
FL	45	47	30	22

What was seen as an obstacle at this stage, when we asked them to write a short paragraph about any topic of their choice, we observed that the students hesitated to write; they did not know where to begin. Most of them did not find the exact words, and others used

the Arabic language before translating it into the English language. However, some students write everything: ideas, thoughts, and expressions related to the topics.

4.1.2 Analysis of the post-test

The post-test was the last step in the experiment. Following the administration of the post-test, students' paragraphs were carefully written. All participants followed the mind map method's technique and used all of the tools needed to create a mind map, such as colors, lines, branches and sub-branches, words, and symbols. Some students might even draw a picture of the topic, whilst others simply wrote the topic's title in the center of the paper.Furthermore,the other students created their mind maps in different ways .Students could supplement the content (see Appendix D). The following is a specific example of a student paragraph in the post-test.

Figure 21

An Example of Students 'paragraphs in the Post-test

Bulling is the use of force, coercion
hurtful teasing or threat to abuse
aggressively dominate or intimadate the
behavior is often repeated and habitul.
my own opinain :
I think bullying is a violence with
the other and a bad works in society
or in school with student, leves an
impact on the hearts of others. We should
stop it, togathers we can make peace and

setting together in table to
brothers hood
How people see bullying!
people See bullying as a good
thing to do, But it's the other
way around and many do not Jenow
it dangers in hearts others

paragraphe :
the School has an important role
in educating the generation . The school
Relps Parnuly raise children in school
children are taught good morals .
Such as honesty, not lying cooperation
with others , oden cleanliness respect
for the great, Kindness to the young
other good bek avoir .
in addition the school provides

Concerning the items that students were asked to write about, the same free topics they chose before there were some variations in students' paragraphs (see table 36). Most of the students were able to write relevant and coherent paragraphs with the correct use of English, an excellent vocabulary, and creativity. On the other hand, they tried to understand everything about this technique since they liked it and said along the way that it is an interesting and helpful strategy.

Table36

Students' criteria in the Post-test

Criteria	Relevance	Semantic coherence	Correct use of English	Excellence (vocabulary and creativity)
FL	52	54	45	40

All in all, from the gathered data about the students' notes, we can conclude that all of them were able to write pieces on the basis of the produced mind maps and followed all the steps provided by the experimenter during the treatment sessions. In this regard, their

paragraphs were organized, neat, legible, and straight to the point; there was neither detailed information nor unnecessary details.

4.1.3 Comparison of the pre-test and post-test results

Table 37:

A Comparison of Students' paragraphs in the Pre- and Post-tests

	Pre-test	**Post-test**
Quality of notes	Average	Post-intermediate
Criteria	Relevance 45 Semantic coherence 47 Correct use of English 30 Excellence (vocabulary and creativity) 22	Relevance 52 Semantic coherence 54 Correct use of English 45 Excellence (vocabulary and creativity)40

As shown in Table 37, the majority of participants were able to use good criteria as well as the setting in the post-test; however, during the pre-test, the majority of the students were not able to use it, just a few of whom wrote good paragraphs. When it comes to relevance and semantic coherence, most of the participants succeeded in both tests. About the correct use of English, there was a slight dissimilarity in the results: 30 students spotted the correct use of English in the pre-test, while 45 of the overall target population had jotted it down in their mind maps during the post-test. A small number of the participants (22) mentioned excellence (vocabulary and creativity) in their paragraphs during the pre-test, whereas in the post-test, 40 of the students indicated excellence (vocabulary and creativity) in their mind maps and post-test paragraphs. The above statistics reveal that the majority of

students were able to write good pieces, whereas students in the pre-test were unsuccessful in writing the required information. This means that the use of the mind map as a note-taking tool enables learners to write better.

4.2Review about the experiment

Some reviews about the experiment that we did after the completion of the expiration period:

➢ You shed light on a very important technique related to a neglected and difficult skill, which is the writing skill, especially for secondary school students.

➢ We should teach them this technique for its great benefits.

Mind mapping (MM is like the foundation for building any piece of writing. Because it helps students organize their ideas and guide their content effectively.

So it helps them create a clear structure to be followed in order to cover all relevant points comprehensively.

➢ When students are taught how to mind map? i.e., to identify the main points for their content, this means that half of the work is done: More than 50% of the writing process is done.

So by mind mapping, writing is becoming easier for students.

➢ Mind mapping encourages students to write in other words. Demolish the fear that students have towards writing paragraphs in English? It is really an important topic that deserves research!

3.3 Summary of the main findings

The aim of this research is to evaluate students' progress after being instructed on how to apply a mind mapping approach to improve their writing skills. We were able to make the following conclusions from the study of the pre- and post-test findings:

- The majority of students faced obstacles and difficulties while writing. However, they are aware of the necessity and importance of developing the mind mapping technique as a strategy, and they have shown their readiness to learn and implement it in the future.

- Using the mind mapping technique allows students to learn in new and more effective ways, allowing them to become more active and creative writers.

- The mind map technique positively affects the students writing skill.

- The mind map technique is adaptable to any high school classroom. Designing mind-mapped lessons in handouts with only important words and ideas written and reinforced by key images, symbols, and colors is an efficient technique of doing this in English language learning.

The results of the present study admit that mind mapping is a very useful and beneficial technique that facilitates the writing process. When comparing the students' paragraphs before and after using the mind map strategy, we found that their writing skills had greatly improved by being more organized, effective, and easy to write. Additionally, the mind mapping technique allowed the students to write faster and helped them recall information more effectively. Consequently, the research hypothesis stating that the use of mind mapping positively influences students' writing skills is confirmed. All in all, mind mapping tends to be an effective strategy that helps improve the students' writing proficiency. Therefore, high school learners need to be trained on the use of this

strategy for better learning performance as it allows them to improve their learning quality and production.

2.3 Pedagogical Implications

The objective of this research is to confirm the hypothesis that using a mind mapping approach improves the writing skills of high school students. As a result of our findings, we address a number of implications in order for others to benefit from our findings. These are the implication teachers must give more time and attention to the writing talent in order to improve students' perceptions of it:

1. Teachers must give more time and attention to the writing talent in order to improve students' perceptions of it:

Many students find writing difficult; teachers should educate their students on the importance of writing, how important it is to understand the various stages of writing that should not be overlooked, how to progress from one step to another, and the significance of each stage. Because of the value of writing skills, high school teachers should dedicate more attention and effort to teaching them to their students.

2. Mind mapping should be used in the classroom as a pre-writing method by teachers. According to our observations and students' responses, high school teachers do not use a prewriting method in the classroom. As a result, we encourage teachers to employ mind mapping during the pre-writing phase since it helps students better associate and organize their thoughts; it also encourages students' thinking and creativity. Furthermore, they should educate students how to use mind mapping on their own to organize their ideas before beginning any piece of writing.

3. Teachers should provide their students more opportunities to develop writing skills. By employing as many writing exercises as possible in the classroom to practice writing skills and prewriting strategies, they should also provide students home work activities to teach them how to write in different paragraph structures using the mind mapping strategy. This would help them improve their writing abilities.

4. Mind mapping is a new and exciting method that English students can utilize both in and out of the classroom. It includes significant pictures, colors, and symbols. It can be utilized as a modern teaching-learning tool that allows students to be more organized, active, and creative when write .Furthermore; it enables teachers to enhance, simplify, and concretize their lessons.

5. The mind mapping technique is a brain friendly strategy as it helps us know how our brains naturally function which makes the learning and teaching process more effective, easier, and more enjoyable.

2.4 Limitations

We achieved important results and findings during the current study;however it is important to mention the various conceptual, methodological, and other limitations that we faced. In the conceptual limits, we discuss the difficulties of the writing skills as well as the absence of prewriting tools in the high school classroom that would help students in better planning and organizing their ideas. Furthermore, students ignore what they should do at the prewriting stage. The impact of mind mapping approach is related to two key elements. The first is the student's writing level, the second is learner differences such as intelligence and preferences and styles.

The methodological limitations are summarized in the difficulties that we faced in the pre-experiment phase. Doing the experiment at the end of the year was not part of our research plan, so we faced some difficulties, such as the absence of some students or fluctuations in the attendance of the same number of students in each class, so the number of students was small compared to the total justice in the two sections. That is to say, it is not easy to become a good mind mapper as this strategy is taught through time, experience and following instructions. Since we are limited by time, we did not give the participants sufficient time to practice more and gain more experience. Therefore, the results cannot be generalized.

When we asked to write a paragraph, we had difficulty convincing students to write in the first session because they find writing in English difficult.

Concerning dealing the literature review, there was a lack of references especially in relation to the section two about Mind mapping, we could not find enough primary sources or books, and most of the sources we relied on were journals.

2.5 Suggestions for future research

The findings of this study indicate that foreign language students at Bouhana Massoud High School in Ferdjioua have various levels of writing difficulty. The majority of students do not plan before writing, which indicates that they do not follow the writing stages. Based on the comparison of pre and post-tests, we find that after investigating the mind mapping method, students' writing skills have developed and improved. As a result, teachers could use this finding to improve their writing teaching in the future.After conducting the present research some suggestions and recommendations are presented:

- First, this research work is conducted in High school instead of conducting it at the University of Mila because of the exams and the delay of the deliberations also due to the lack of time for the second semester. So, future research could be conducted at the department of English at the university of Mila

- Second, performing further research on students' writing difficulties and recommending other writing strategies as a solution to these difficulties.

- Third, in order to generalize, additional study on the impact of mind mapping approach on writing skills is needed.

- Lastly, because the findings of this study cannot be effectively generalized, future research could be conducted on a larger population.

Conclusion

This chapter describes the research methods and design that were utilized to investigate the hypothesis. It demonstrated the significance of both the mind map approach and writing skills in high school learning. According to our findings, the majority of students weren't using this method on a regular basis. However, when they were given training about it, they succeeded in using it, and their writing skills improved considerably.

General Conclusion

The purpose of this study was to improve students' writing skills by analyzing the mind mapping strategy among Bouhana Massoud's second year foreign language high school students. We hypothesized, in particular, that "the use of mind mapping technique will help to enhance students' writing proficiency."We aimed to show students how to use the mind mapping technique to order their ideas and avoid mistakes. A pre-experimental study was used to support or invalidate our hypotheses, and to collect the necessary data, a questionnaires, pre and post-test paragraphs, and textual analysis were used.

Our results show that students' writing enhanced from the first to the last session of the experiment. As a result, we may conclude that the mind mapping technique plays a causal role in helping HS students to enhance their writing skills. Furthermore, using mind mapping as a prewriting technique allows students to map, organize, and set up their ideas before beginning to write .In addition, data from the questionnaire demonstrated that students had good views of this strategy. Even during the experiment, this was observed.

As for the results of the teachers' questionnaire, the most important skills that requires more attention through extensive reading and practice is writing. In addition, they develop an indirect connection between students' writing performance and the use of mind mapping as a pre-writing strategy, and they praise the use of mind mapping for decreasing writing issues and improving students' writing proficiency.

This study gives an overview of the use, effectiveness, and implementation of mind mapping in the process of language acquisition from the viewpoints of learners and teachers at BouhanaMassoud HS. A few problems surfaced that will need to be investigated further in the future. First, the use of mind mapping was investigated using a small sample; this may be enlarged to determine the extent to which the mind map technique may help to the

development of writing proficiency. Second, because student abilities are so necessary in language acquisition, future research on learners' writing abilities can be conducted. Finally, teachers emphasized reading topics that may be investigated more in relation to improving students' writing skill and ability.

Finally, the comparison of the pre and post tests revealed that our participants' writing skill has been developed after the implementation of the mind mapping strategy. The main results obtained confirmed the hypothesis that the use of mind mapping strategy before writing improves the students writing proficiency .

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Appendices

Appendix A: Students' Questionnaire

Dear second year students

You are kindly invited to answer this questionnaire, which is a part of a research we are carrying out about teachers and learners views toward using mind mapping technique in writing. Thank you in advance.

Section One: Background Information

Q1.you chose to study foreign languages because it was :

Your personal choice ☐

Parent 's suggestion ☐

An obligation ☐

Q2.How long have you been learning English?

……………………………………………. Years

Q3.Do you like being an English language learner?

☐ Yes   ☐ No

Section Two : Writing Process

Q4. How could you describe your level in English language?

☐ Good   ☐ Average   ☐ Weak

Q5.Which of the following skills do you usually focus on while studying English?

a. Speaking ☐

b. Writing ☐

c. listening ☐

d. reading ☐

Q6.Do you think that writing is an important language skill in learning English ?

Yes ☐   No ☐

Q7.How often do you enjoy writing in English?

a. Always ☐

b. Sometimes ☐

c. Rarely ☐

d. Never ☐

Q8.How do you feel when your teachers asks you to write a piece of writing?

Comfortable ☐   Anxious ☐

Q9.Do you find writing in English difficult ?

Yes ☐   No ☐

Q10.Which of these factors affect your writing ?Please tick (√) one answer.

a. Anxiety ☐

b. Lack of vocabulary ☐

c. Lack of practice ☐

d. Fear of making mistakes ☐

Q11. Does your teacher help you while writing ?

Yes ☐　　　　　　　No ☐

Q12.writing is a process made up of stages; which one is the most difficult ?

a. Pre-writing (planning) ☐

b. Drafting ☐

c. Post-writing (publishing) ☐

Section Three: Mind Mapping

A brief definition for mind mapping: is a way to brainstorm thoughts, is a type of diagram with lines and circles for organizing information so that it is easier to use and remember.

Q1.Are you familiar with the term "Mind Mapping" ?

Yes ☐　　　　　　　No ☐

If yes ……..do you apply this technique while writing ?

Yes ☐　　　　　　　No ☐

Q3.Do you think there is a relationship between the writing skill and mind mapping ?

Yes ☐　　　　　　　No ☐

Q4.Have you ever tried to practice this strategy by yourself before ?

Yes ☐ No ☐

Q5.How do you mind map?

a. Draw ☐

b. Plan ☐

c. Use key words ☐

d. write the main ideas ☐

Q6.Do you use technology to mind map effectively?

Yes ☐ No ☐

Q7."Mind Mapping" is important in the writing process?

a. Strongly agree ☐

b .Agree ☐

c. Disagree ☐

d. Strongly disagree ☐

Justify

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……………………………………………………………………………………………….

Q8.Do you think that following mind mapping techniques would help you produce better ideas ?

Yes ☐   No ☐

Q9.Do you think that the use of mind mapping is time consuming ?

Yes ☐   No ☐

Q10.How do you rate your writing performance after mind mapping ?

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Thank you

Appendix B : Teachers' Questionnaire

Dear Teachers,

You are kindly requested to fill in the present questionnaire which is a part of a research work entitled "Enhancing Students' Writing through the use of "Mind Mapping ".

 Be sure that your answers will help us identify this aim.

Please, put a tick (√) in the appropriate box(es) or give full answer(s) on the broken lines. Thank you in advance for your precious help.

Section One: Background Information

Q1. What is your qualification?

 a. License ☐

 b. Magistère/Master ☐

 c. Doctorate ☐

Q2.How long have you been teaching at the higher level ?

…………………………………..years

Q3.What is your specialty?

…………………………………………………………

Section Two: Writing process

Q4. How do you find teaching writing?

 a. Easy ☐

b .Challenging ☐

c. Difficult ☐

d. I do not teach writing separately ☐

Q5. Do you find challenges in your classroom while teaching writing?

Yes ☐   No ☐

If yes ; what are they

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Q6. How do you rate students' writing ability?

Good ☐   Average ☐   Poor ☐

Q7. Which approach do you follow when teaching writing ?

a. The product approach ☐

b. The process approach ☐

c .The genre approach ☐

d. The process-genre approach ☐

If you follow another approach ; would you please state it below ?

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Q8. Which type of assessment do you follow when correcting students' writing ?

Self-assessment ☐   Teachers' assessment ☐

Section two : Mind Mapping

Q1. Do you use mind mapping while teaching ?

Yes ☐   No ☐

And why ?

....

....

....

Q2. Do you think that mind mapping technique would help students develop their ideas easily?

A lot ☐   A little ☐   Not at all ☐

Q3. What type of mind mapping do your students use ?

a. Drawing ☐

b. Planning ☐

c. Using key words ☐

Q4. Have you encouraged your students to use mind mapping techniques in writing ?

Always ☐   Sometimes ☐   Never ☐

Q5. To what extent does mind mapping help students organize their writing ?

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Q6. Do you encourage your students to use technology in order to mind map appropriately?

Yes ☐   No ☐

Could you please add further information about this topic ?

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Thank you

Appendix C: An Examples of Students 'paragraphs in the Pre-test

The Mother

The mother is the greatest creatur in the universe, she is the source of tenderness and giving

She carried me in her womb for nine months and endured the trouble in my upbringing, and she did not spare me anything. I wish her a long life and we are at her service and god willing I will make her proud of me. Finally, I advice everyone to preserve the mother because it is the door of heaven.

Sport is a muscular activity that is beneficial to the body

First, spots have many types, including football, basketball, which require players, a stadium and referee

Then, it is a cure for many serious diseases such as obesity.

Finally, it is a fun and entertaining activity for the soul and the mind, it is also possible to earn money, honor the contry and win medals through the olympics

Because of all this, you should practice one of the spots that you love

AS 3

Hello everyone! it's abe again. today I am going talk about my father. I love him, he's my hero! first of all, he's a school manger. He has a good heart, beautifull smile and ocean eyes. thank you mother because you choose the best choice for your children, and thank you dad for everything. I'll make you proud ♡ may God bless him for us.

Friendship has a deep meanings, Friendship is something we need and care about, we need friend when we are happy.

My own opinion about friendship. There is no doubt that friendship is an exciting subject to write about. I'm pleased to talk about this topic We can say that friendship is a special relation that depends on unconditional trust. love, respect and loyalty.

In case of any confusion or problem

- The child hood is The best time in our life. which we d'ont had any problem. We was just playing all The time with our friends.

when J was a child, J was very couriceus and J loved discovering and Searching about cumplicate Things, J loved The Story's of fiction and prencesses and playing with dolls and made its clothes, J was a good disiiner. this love of disiining is Staying with me at new, when J graew up its graews with me.

3

Tomorow, J want to discovred Alegria and his Zones, so J want to begin a trip around Algeria, First, J go to constontine and J visited the holebruidge, then J go to Algérie and J go to Maqam El shoheed, and J Visited the sea, After that J go to Tomanrast and J visited the montanes of hogar, Finally J Back to ferjiwa in Mila, and this trip is the Best trip J have aver do it in My life!

Appendix D: An Example of Students 'paragraphs in the Post-test

Education is the most important means of progress. Education works to develop an individual's abilities. When a person is well educated, he or she will become an innovator or scientist in his or her field of study.

Scientists and inventors are responsible for development and progress. All the countries that made progress were interested in education first.

If the doctor is proficient in his specialty, he will be able to diagnose the disease and prescribe appropriate treatment, and thus get rid of many of the diseases prevalent among people, the person becomes in good health, able to work and produce.

From the above, the importance of education to the progress of countries is evident.

Healthy food is the daily continuous habit of eating food that is beneficial to the body and avoiding all foods that harm the body. In order for us to say that a food is healthy, it must meet certain conditions and features. One of the most important of these conditions is that the food is natural and not manufactured, and no preservatives or artificial colors are added to it, it must also be full of benefit for the body. Also, fried or high fat foods are not considered healthy foods, such as fast food that contains large amounts of fast. Also, we must provide the body with sugars, but natural, because white sugar leads to many diseases. Natural sugar is found in natural

Write a paragraph

Hello!.

I'm writting a paragraph about Friendship.

Friendship is something we all need and care about. Friendship has a deep meanings. We need Friend when we are happy? and we need them when we have a hard time. We meet our friends everyday in school. at work. or anywhere. friends are priceless.

a true friend are hard to find. but when we find them, it is hard to leave them. They have a big impact on our life. because we spend most of the time with them. good friend are a gift to us from Allah.

Life is better with friends, and best friends don't let you

Write a short paragraph.

The best years of one's life are the childhood days. The sweet memories of this period are glorious. They have the freshness of a dream. A child has no responsibilities. He is looked after by his parents. He gets everything without doing anything. A child enjoys perfect freedom. He has no worries, no troubles. He can say anything to anybody

If a child does something wrong he is generally rescued. Even his meaningless chatter is a source of joy. A child's life is full of innocence.

He gets joy in floating paper boats. He often quarrels with others over small things but soon forgets about it. childhood is really the golden period of one's life.

Hi, I'm wijdane
right now I'm going to write a
short paragraph talking about
my hobbies and things that I Love
to do in my free time or in
holydays cause I prefer to stay
at home alone. First, I like
to listening to pop songs like
songs of the weekend, Lana Delrai
Ariana grandy, Dua lipa ....,
and I like to dancing to K-pop
songs of BTS, Black pink and TXT
.... Second, I love painting and
cooking snacks...... Then, I
prefer to watching K-drama,
American series and movies ....
after that ~~Finaly~~, I'm intresting with leaning
new skills and languages and
searching about unusical things
.... Finaly, I'm also being a lazy
person sometimes who doesn't
care about anything and do nothing.

My Mother.

I wont to telle you Maw about the most person I love in my life, yes she is my Mother. my mom is an Enjel, she is my Diamond, my mom is a Beautiful Smooth Strong and Sweet person I saw, She is my father also, Becouse my dad is died when I was 8 year.

I love my mom mor then my selfe Becous Sche make me the girl that I was at this moment, So, maw its my turne te keep her happy and praived of me, I Schould Be a good persone and a Straight Strong girl like her and make my father dreem reel, yes this is what I do in this moment I Stady and I wiche realise my dreem, and make my parntes happy of my, and I will be a good lawyer in the

. Hello, My name is I Kram Boulayane, I'm 17 years old I am a student in Bouhana Messoud Secondary school, I am from in Algeria. I live in Ferdjiona

. I live with my Family (my mother and my Father, two brothers and Two sisters). I am a sociable person I like making Friend. In my free time I like reading books and goto shooping with my friend and I like listening music

. I have dream in the Future I want to become a teache and help poor.
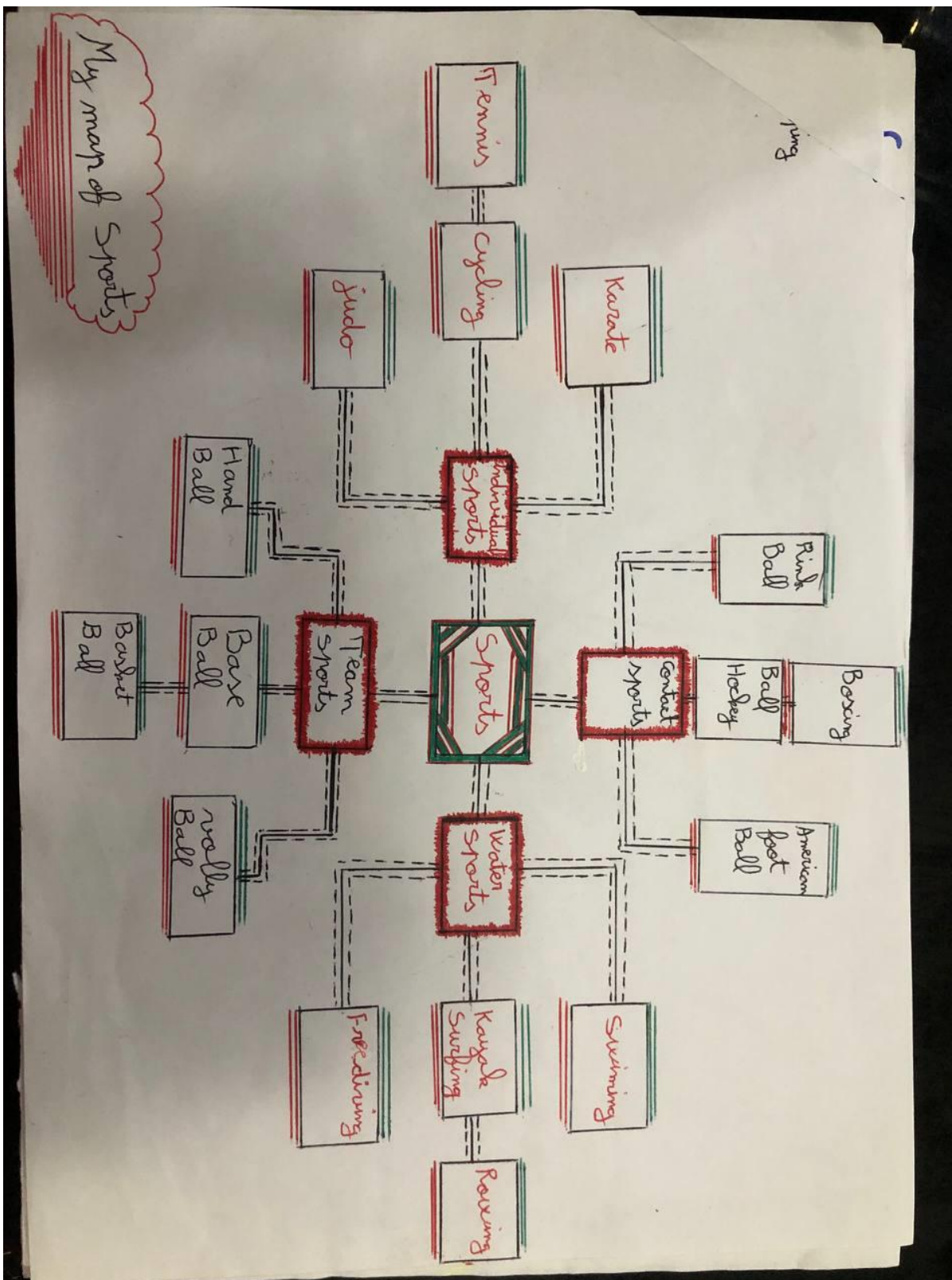
Sport is one of the practices
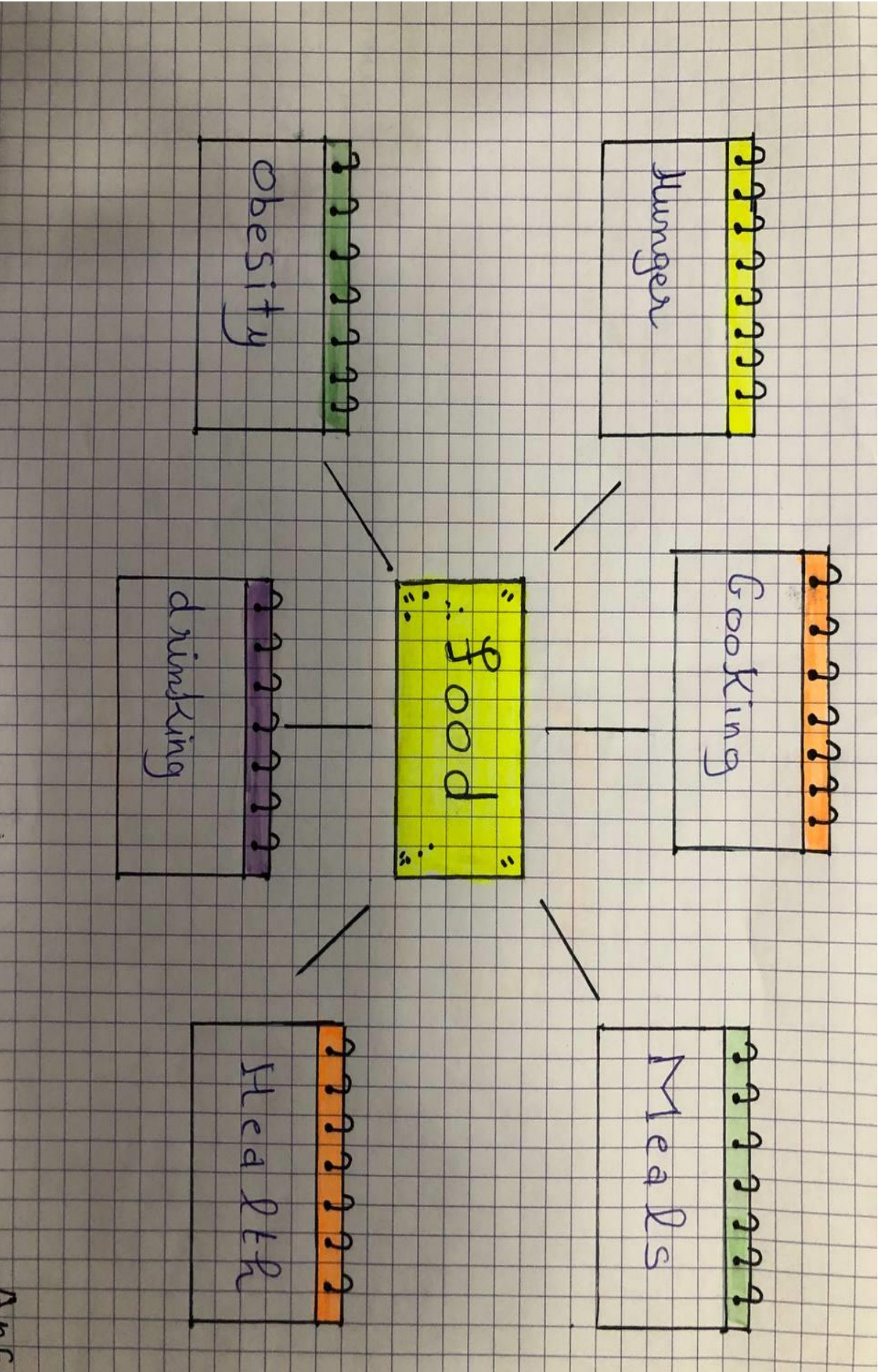that must be done every day
for a healthy body

It is divided into several
types including water sports
such as swimming, outdoor
foot ball, and boxing.
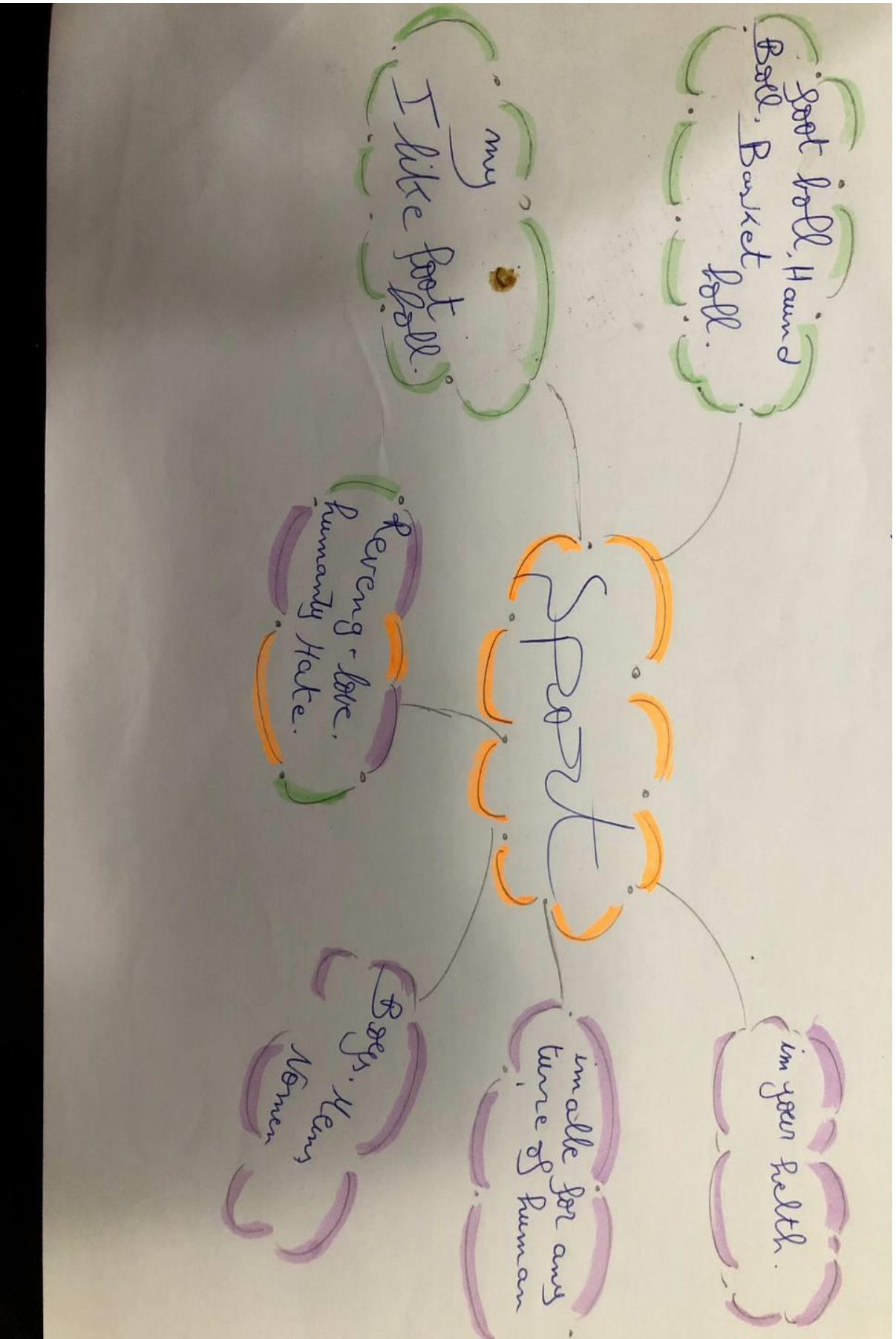But I practice swimming as
a primary sport and football
as a hobby.
In swimming, I have a champion
whom I follow. He is Makhlouf
Isaac. He was born in the city
of jijel and up there, He
became the champion of Algeria
in swimming. He is now in canada
attending the professional swimming
club. I love foot ball so much
especially Lional Missi . ♡

Appendix E: The Samples of Students' mapping sheets
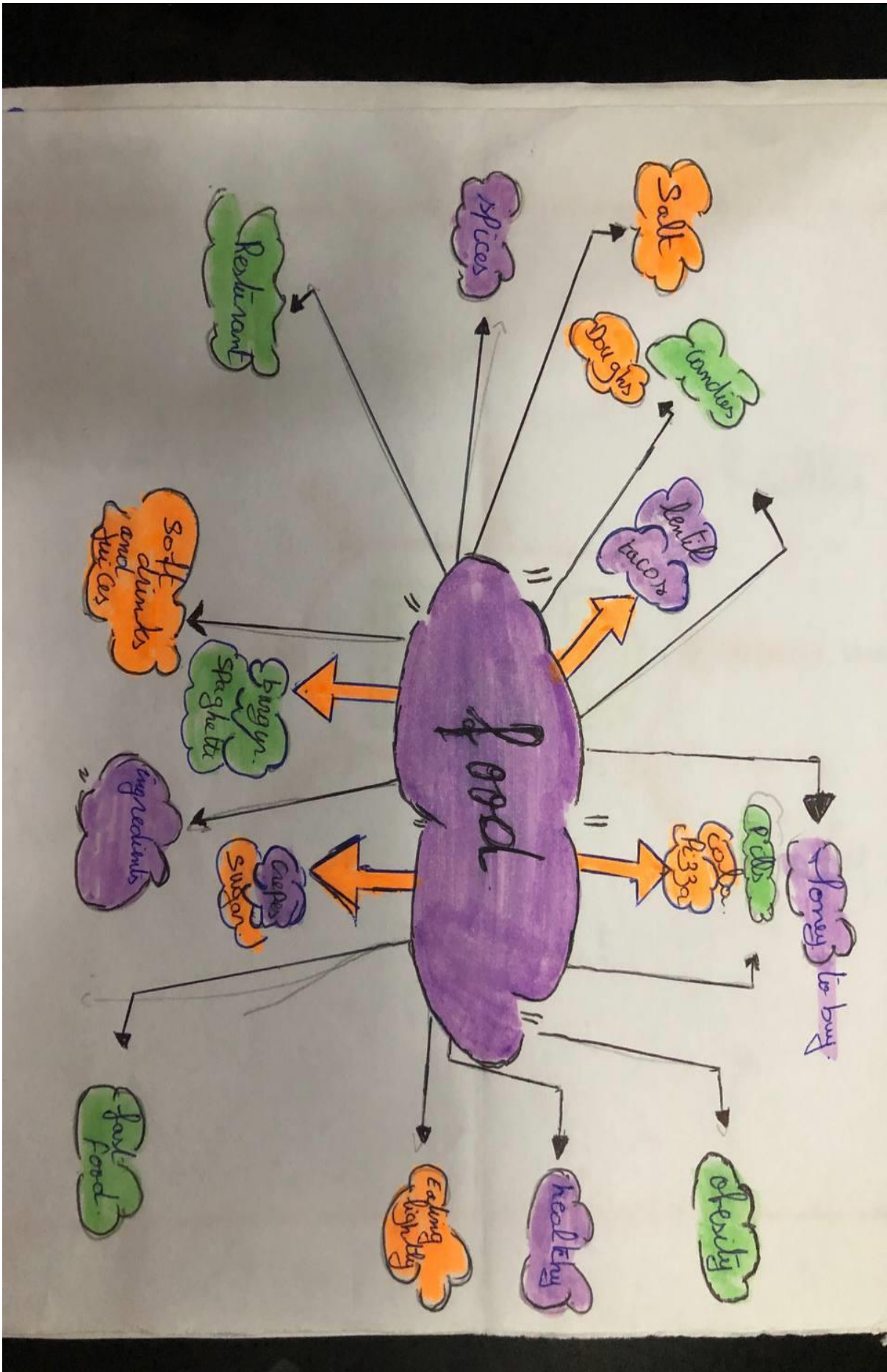
Hunger

Cooking

Food

Meals

obesity

drinking

Health

foot boll, Hand Boll, Basket boll.

my I like foot boll.

Sport

Revenge, love, humanity Hate.

Boys, Keeng Nommen

im alle for any tune of human

im your helth.

opic =

Diagram about food.

Fats, oils. confectionery.

Meat, Fisch. alternatives
2%

Milk. cheese.
dairy

Fruit. 1%
Vegetables.
3%

Bread.10%
cereals
potatoes

Healthy food pyramid.

Food (meals)

Dinner
- vegtabls
- meat or chicken
- Salad , Fruts ...
  - orange
  - appel
  - strawberry

Lunch
- vegtabls
- pasta
- Rice ...
  - Tomato
  - potato
  - onion

breakfast
- milk , coffee , Tea
- bread , butter
- jam or honey ...

School

Mind map with central node "School" connected to:

- Principle Room
- Sports Hall
- Library
- Boys Restroom
- Girls Restroom
- Auditorium
- Chair
- Science lab
- Board
- School Play ground
- Classe
- Chalk
- Play
- Teacher Lounge
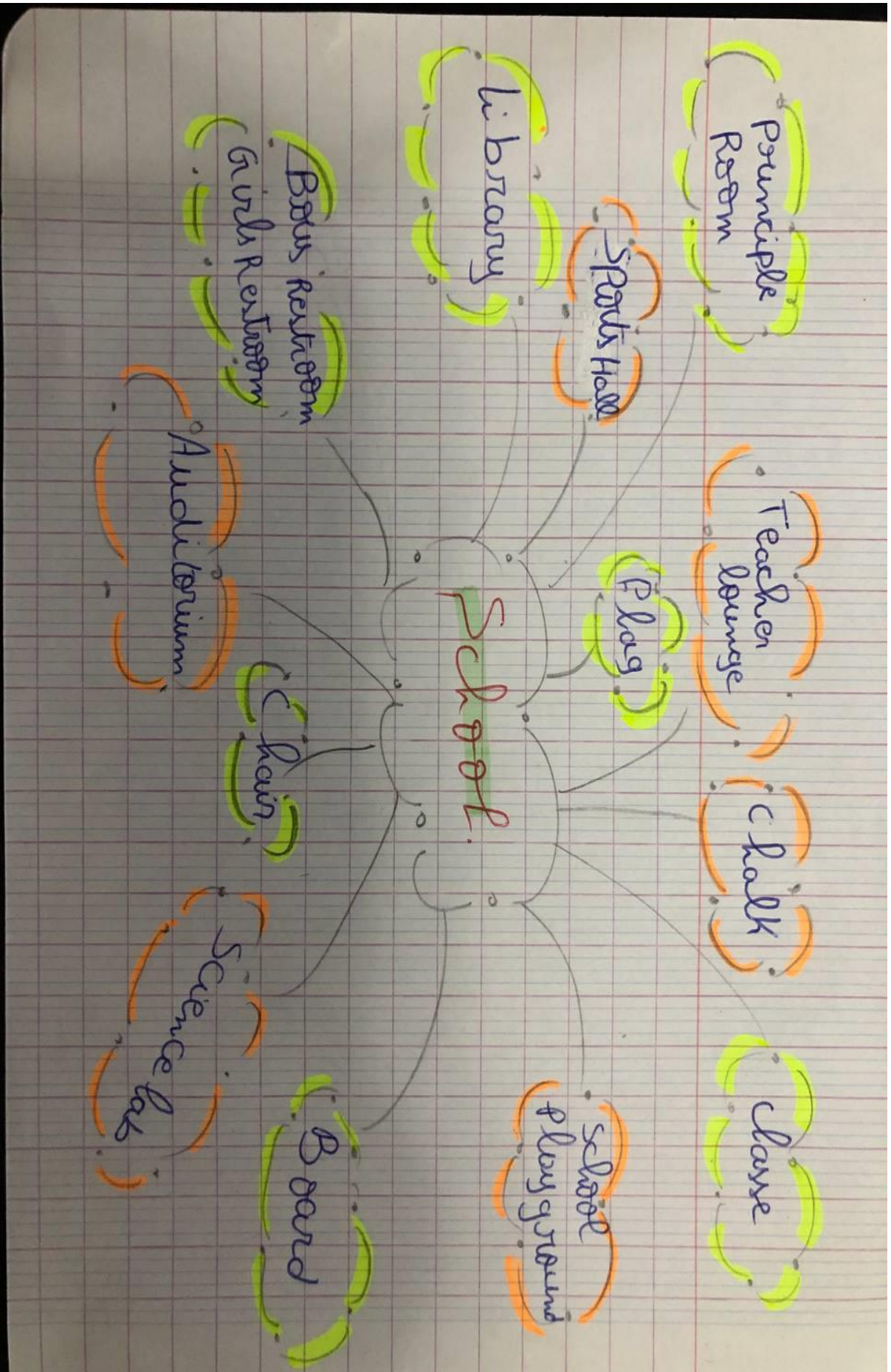
Résumé

La cartographie mentale est une technique utile et efficace dont les élèves et les enseignants peuvent l'utiliser à diverses fins. Le but de cette étude est d'examiner le rôle de la technique de cartographie mentale dans l'amélioration des compétences en rédaction des élèves. L'étude vise à évaluer l'hypothèse selon laquelle l'utilisation de la technique de cartographie mentale améliorera considérablement les compétences en rédaction des élèves. Pour atteindre les objectifs de l'étude et répondre à ces questions, un questionnaire a été distribué, et une expérimentation auprès des élèves de deuxième année de langues étrangères du Lycée Bouhana Massoud a été menée au cours du troisième semestre pour l'année académique 2022-2023. Par la suite, un questionnaire structuré a été réalisé auprès de cinq professeurs d'anglais. L'étude était basée à la fois sur des méthodes quantitatives (pré-post-test, questionnaire) et qualitatives (analyse textuelle) de collecte de données. Deux groupes de 56 étudiants ont assisté à cinq sessions sur la technique de cartographie mentale, où ils ont expérimenté et appris à l'utiliser. Les résultats des pré-et post-tests donnés au début et à la fin de l'étude ont révélé que les paragraphes des élèves se sont grandement améliorés grâce à l'enseignement et à l'expérience de l'utilisation de la cartographie mentale. Ils sont passés d'écrits désordonnés et désorganisés à des écrits plus élaborés incarnés dans des cartes mentales bien conçues. Par conséquent, l'hypothèse de recherche a été confirmée et la technique de la carte mentale s'est avérée être une stratégie efficace et utile pour améliorer les compétences des apprenants en anglais.

Mots clés: Mind mapping, Écriture, Compétence en écriture, Apprenants du Secondaire, Langue anglaise.

الملخص

الرسم الذهني هو تقنية مفيدة وفعّالة يمكن للطلاب والمعلمين استخدامها لأغراض متنوعة. هدف هذه الدراسة هو استكشاف

دور تقنية الرسم الذهني في تعزيز كفاءة الطلاب الكتابية. تهدف الدراسة إلى تقييم الفرضية التي تفترض أن استخدام تقنية

الرسم الذهني سيعزز بشكل كبير مهارات الكتابة لدى الطلاب. لتحقيق أهداف الدراسة والإجابة على هذه الأسئلة، تم توزع

استبيان، وتم إجراء تجربة مع طلاب اللغة الأجنبية في السنة الثانية في ثانوية بوحنا مسعود خلال الفصل الدراسي الثالث

للعام الأكاديمي 2022-2023. بعد ذلك، تم إجراء استبيان منظم مع خمسة مدرسين للغة الإنجليزية استندت الدراسة على

الأساليب الكمية (اختبار ما قبل وما بعد، استبيان) والأساليب النوعية (تحليل نصي) في جمع البيانات. شاركت مجموعتين

تتألفان من 56 طالبًا في خمس جلسات حول تقنية الرسم الذهني، حيث قاموا بتجربتها وتعلم كيفية استخدامها. أظهرت نتائج

الاختبارات قبل وبعد الدراسة التي أجريت في بداية ونهاية الدراسة تحسنًا كبيرًا في فقرات الطلاب نتيجة للتدريس

والتجربة باستخدام الرسم الذهني. انتقلوا من كتابة غير منظمة وفوضوية إلى كتابة أكثر تفصيلاً ومتجسدة في خرائط ذهنية

مصم بشكل جيد. وبالتالي، تم تأكيد فرضية البحث، وتبين أن تقنية الرسم الذهني تعد استراتيجية فعالة ومفيدة لتحسين كفاءة

متعلمي اللغة الإنجليزية

الكلمات المفتاحية:الرسم الذهني، الكتابة، مهارات الكتابة، تلاميذ المدارس الثانوية، اللغة الإنجليزية.