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Degree in the field of English Language and Literature**

**Major: Linguistics**

# **Using Mind Mapping Strategy in Improving Learner's vocabulary.**

**The Case Study on Middle School Second Year Pupils at Sidi-  
Khouiled.**

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# Dedication

In the Name of Allah, the Most Gracious, Most Merciful, All the Praise is due to  
Him alone, the Sustainer of the entire World.

I wish to dedicate this modest work to:

My parents who never stop blessing me with their prayers. My father, the source  
of motivation and patience. My mother, the source of love and tenderness.

My beloved husband who has supported and pushed me forward

“ Douak Mohamed”.

My sons and pieces of my heart, “ Moudjib” and “ Motasime Billah”.

My princesse and precious girl “ Rahma”.

My wonderful sisters and brothers who shared with me the best moments in my  
life. My beloved brother “hossine”, Zaki, Ammar, my sisters; Meriem, Zineb, Fifi,  
Lamis and chahrazed.

To my inspector who had inspired me to be good teacher of English

“ Liam Abou Bakr”

To my second family, my friends, and the good souls in my life.

Thanks a lot.

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First and foremost, thanks to Allah the almighty who helped me to complete this work. Peace and blessings be upon the messenger of Allah, Mohammed peace be upon him.

**« Allah has promised those of you who believe and do good that He will certainly make them successors in the land, as He did with those before them; and will surely establish for them their faith which He has chosen for them; and will indeed change their fear into security—'provided that' they worship Me, associating nothing with Me. But whoever disbelieves after this 'promise', it is they who will be the rebellious...» (Surah An-Nur :55)**

I would like to thank my supervisor "Mr. Cheridi Abderachide" for his invaluable patience and guidance.

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**Siham Messaoud Douak**

# Abstract

Vocabulary learning is an important aspect of language learning and one of the biggest challenges that students face in their studies. The lack of vocabulary knowledge among students is considered to be the main obstacle that prevents them from communicating and writing effectively. This study attempts to investigate to what extent can mind mapping strategy MMS improve students' vocabulary. The study was conducted at the level of middle school with second-year pupils. It involved a quasi-experiment; pre-test and post-test. The results revealed a remarkable improvement in students' vocabulary appropriateness and vocabulary richness. The study recommends the integration of this strategy in middle school teaching vocabulary strategies.

**Keywords:** Vocabulary learning - EFL learners- Mind Mapping

# List of Abbreviations

**EFL:** English as a Foreign Language

**MMS:** Mind Mapping Strategy.

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( Tony Buzan, Mind-Mapping-for-kids, page 12)

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## **Introduction**

As stated in the Curriculum of English for Middle School Education in Algeria (May 2015), the objective of English covers making the learners able to interact, interpret and produce oral and written messages/texts of average complexity, of descriptive, narrative, argumentative or prescriptive, using verbal or non-verbal supports (written texts, audio and visual aids) and in meaningful situations related to his environment and interests. Based on this target competencies; learners should learn how to write and communicate about topics related to their environment and interests with the help of teachers. However, teachers should train them to think first and then speak or write. They have to design individual tasks based on what their learners need. In the teaching-learning process, there are four skills that should be mastered. They are listening, speaking, reading, and writing. In order to develop these skills, learners should have certain knowledge of vocabulary. They occasionally have a qualification in speaking and writing but they have less vocabulary competence. Therefore, those students are not able to express their ideas because they are not good at vocabulary. The more limited vocabulary they have, the poorer writing they produce and the more obstacles appear in speaking. Furthermore, middle school learners especially 1MS (first year) and 2MS(second year) have very limited knowledge of written or spoken English. They can't interact or communicate easily with the teacher which might cause disciplinary problems. Additionally, young learners are characterized of being talkative, hyperactive, and still emotionally immature which makes them not well ready and motivated to learn ; in this case, teacher might not achieve his planned learning objectives.

To solve the problems above, teachers need a strategy to attract his learners' attention first, create a good atmosphere in the classroom when learners feel comfortable to express their ideas interact freely without any fear to make mistakes.

In addition, learners need a technique to help them understand the new words easily, memorize them, and able to retain them when needed without being anxious about spelling mistakes since it is the biggest obstacle young learners face. One of the strategies is Mind Mapping. Mind mapping Strategy MMS is a method that can make the learners find it easy to express and organize their ideas, absorb information into

their brain, and take it out easily (Angga, 2012). This technique might be helpful to improve learners' creativity and make them happy in learning because it consists of colors, pictures, and some keywords that can also make them find it easy to learn. Furthermore, it might be a good technique to create self-confident and autonomous learner.

### **Statement of the problem:**

Based on the background mentioned above; this research raised the following problem: to what extent could Mind Mapping Strategy MMS be effective in improving learners' vocabulary?

### **Research questions and hypothesis:**

The following study will sought to answer the following questions:

- ❖ To what extent can mind mapping strategy MMS improve learners' vocabulary?
- ❖ How can learning vocabulary with Mind mapping strategy effect learners' speaking and writing skills?
- ❖ How can Mind mapping strategy (MMS) be implemented in teaching vocabulary lessons?

### **Objectives of the Study:**

This research aims to accomplish the following objectives.

- ❖ It investigates the effectiveness of using Mind mapping strategy MMS in improving learners' vocabulary appropriateness and vocabulary richness.
- ❖ It illustrates the impact of learning vocabulary with Mind Mapping Strategy MMS on learners' speaking and writing skills.

### **Rationale of the study:**

In the light of what was mentioned previously, middle school learners need to write and communicate effectively in different situations related to their interests and environment. However, their lack of vocabulary prevents them from doing so. This

research was conducted to investigate the role of Mind Mapping Strategy MMS in improving learners' vocabulary appropriateness and richness.

### **Definitions of the key terms**

**Vocabulary:** According to Richard (2010), vocabulary is a set of lexemes that can be in the form of single words, compound words, and idioms.

Campillo (2015) stated that vocabulary is the total number of words.

Halimah (2017) reported that vocabulary is “the total number of words or stock of words with their meaning which make up a language used by person, class, or profession”. (Fikriah et al., 2021)

**Mind Mapping:** defined by Tony Buzan ( 2006) as “ a creative note-taking technique in a visualization and graphic forms that are used to make people find it easy to enter information into their brains, keeping the information in a long term memory and taking it out from their brains easily by engaging imagination and association”.

# **Part One: Review of Literature.**

## **Chapter one: vocabulary learning**

### **Introduction**

English is one of the most important subjects for students in middle school. A lot of attention should be devoted to achieving the teaching objectives. Some of the teaching objectives for English in middle school are developing the communication competence of learners in both oral and written forms to achieve a basic knowledge of English. Therefore, they are encouraged to communicate using speaking and writing skills to improve their knowledge. However, the biggest obstacle that prevented the teacher from achieving the teaching goals is the learner's lack of vocabulary. Furthermore, strengthening learners' vocabulary is considered to be the main interest of English teachers in middle school.

#### **1.1.1 Definition of vocabulary**

The term vocabulary can be defined differently with regard to different viewpoints. Vocabulary represents all words that someone knows, learns, or uses (Longman Dictionary, 1995). Also it refers to all the words in a particular language that a person knows or uses (Oxford learner's dictionaries). Richard and Renadya (Richards & Renadya, 2002) stated that vocabulary is a core component of language proficiency and provides much of the basis for how well students speak, listen, read and write. Moreover, (Iman Alizadeh, 2016) stated that "a word in most linguistic analyses, is described as a set of properties, or features, each word is the combination of its meaning, register, association, collocation, grammatical behavior, written form (spelling), spoken form (pronunciation) and frequency. Halimah (cited in Fikriah et al., 2021) reported that vocabulary is total number of words or stock of words with their meaning which make up a language used by person, class, or profession. In addition, (Mukoroli, 2011), defined vocabulary as "a set of words that are the basic building blocks used in the generation and understanding of a sentence",

Based on the previous definitions, it can be concluded that vocabulary is a set of words within a language the learner can develop which functioned as a useful and fundamental tool for communication and acquiring knowledge.

### **1.1.2 Types of vocabulary:**

Vocabulary can be divided into several subgroups, therefore, it is not put at random, it is said to be systematic and well structured.

(Maskor & Baharudin, 2016), stated that there are two kinds of vocabulary; receptive vocabulary and productive vocabulary. They are often called “passive” and “active” vocabulary.

#### **1) Receptive vocabulary Vs Productive vocabulary:**

Receptive vocabulary refers to words that learners recognize and understand when they are used in context, but which they cannot produce. It is vocabulary that learners recognize when they see or meet in reading text but do not use in speaking and writing (Stuart Webb, 2009). On the other hand, Productive vocabulary refers to words that the learners understand and can pronounce correctly and use constructively in speaking and writing. It involves what is needed for receptive vocabulary plus the ability to speak or write at the appropriate time. Therefore, productive vocabulary can be addressed as an active process, because the learners can produce the words to express their thoughts to others. (Stuart Webb, 2005)

From the previous definitions, it is clear that there are for types of vocabulary; passive or receptive vocabulary that refers to listening and reading vocabulary, Active or productive vocabulary that refers to speaking and writing.

#### **2) Abstract VS Concrete vocabulary:**

Abstract vocabulary refers to words that cannot be proven by appealing to the physical senses such as: ideas, beliefs, emotions, and character traits like freedom, happiness, and love...etc. However, concrete vocabulary refers to words that can be proven by appealing to the physical senses: Animals, people, places, nature, colors, clothes, man-made objects, sounds, tastes, smells, ...etc. In a study done by (Yui et al., 2017) to investigate whether concrete words are better recalled than abstract words. The results revealed that the participants recalled concrete words better than the abstract words, supporting previous studies.

#### **3) Content Vs Function Vocabulary :**



Content words refer to the group of words that carry the content or the meaning of a sentence; they are words needed for the purpose of talking about events or objects used by speakers when they are involved in interactive activities. Usually, content words are nouns verbs, adjectives and sometimes adverbs (Schmitt & Rodgers, n.d.page.35). Content words are open-class words in the sense that they accept the addition of new morphemes. In contrast, Function Words are usually prepositions, determiners, conjunctions...etc (Thornbury, 2002). They are words that have little lexical meaning and sometimes they seem to have ambiguous meaning. Function words are close-class words that they do not easily accept the addition of new morphemes.

### **1.1.3 Aspects of vocabulary in teaching English**

The concept of a word can be defined in various ways, but three significant aspects teachers need to be aware of and focus on are form, meaning, and use.

- 1) **Form:** According to Nation (2001), the form of a word involves its pronunciation (spoken form), spelling (written form), and any word parts that make up this particular item (such as a prefix, root, and suffix). An example for word parts can be seen with the word uncommunicative, where the prefix un- means negative or opposite, communicate is the root word, and -ive is a suffix denoting that someone or something is able to do something. Here, they all go together to refer to someone or something that is not able to communicate, hence uncommunicative.
- 2) **Meaning:** Nation (2001) stated that meaning encompasses the way that form and meaning work together, in other words, the concept and what items it refers to, and the associations that come to mind when people think about a specific word or expression.
- 3) **Use:** Nation noted, involves the grammatical functions of the word or phrase, collocations that normally go with it, and finally any constraints on its use, in terms of frequency, level, and so forth.

When teachers teach vocabulary to build students' knowledge of words and phrases, helping them learn any and all of these different components assists them in enhancing their English vocabulary knowledge and use.

#### **1.1.4 Importance of learning vocabulary**

Vocabulary is considered to be the basis to English language teaching since students cannot understand others or express their own ideas without sufficient vocabulary. In the past 25 years, scholars started to give much interest and importance in vocabulary learning and acquisition. Wilkins (1972) wrote that “. . . while without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (pp. 111–112). Lewis (1993) went deeper to argue, “Lexis is the core or heart of language” (p. 89). As students develop greater fluency and expression in English; it is significant for them to acquire more productive vocabulary knowledge and to develop their own personal vocabulary learning strategies. Students often instinctively recognize the importance of vocabulary to their language learning. As Schmitt (2010) noted, “learners carry around dictionaries and not grammar books” (p. 4). Teaching vocabulary helps students understand and communicate with others in English.

#### **1.1.5 Strategies of teaching vocabulary**

The main objectives of teaching English in middle school is to make the learners able to understand and produce speech or written texts, apply the language in their daily life. Therefore, teachers have to develop different strategies to facilitate vocabulary learning and acquisition. A strategy is a tool to achieve a goal. The technique that is needed to improve their vocabulary learning skill is a technique that can make the learners easy in expressing their ideas, to arrange the words to be a good sentence. These are some strategies used by a teacher of English in presenting the meaning and form of vocabulary

##### **a) Using Objects:**

This technique includes the use of realia, visual aids, and demonstration. They can function to help learners in remembering vocabulary better, because our memory for objects and pictures is very reliable and visual techniques can act as cues for

remembering words (Takač, 2008). This technique may have a better influence on visual and kinesthetic learners because it makes them more engaged in the class.

**b) Introduce new words in context:**

Nation and Coady (1988)(Nation, P., & Coady, 1988) stated that there are two types of contexts. The first type is the context within the text, which includes morphological, semantic, and syntactic information in a specific text, on the other hand, non-textual context, or the general context, which is the learner's background knowledge, has about the subjects. Learning from context includes learning from extensive reading, also learning from taking part in a conversation, and learning from listening to stories, films, television, or the radio (Nation, 2001).

**c) Eliciting:**

This technique is more motivating and memorable. It makes learners more involved by maximizing speaking opportunities and checking their understanding.

**d) Mime, Expressions and Gestures:**

Many words can be introduced through mime, expressions, and gestures such as adjectives, verbs, adverbs ...etc. Klippel (1994) claimed that "mime or gesture is useful if it emphasizes the importance of gestures and facial expression on communication. In the essence, it can not only be used to indicate the meaning of a word found in a reading passage but also in speaking activity as it stresses mostly communication.

**e) Drawing:**

Objects can either be drawn on the blackboard or drawn on flash cards. Drawing can help young learners easily understand and realize the main points that they have learned in the classroom ( Mofareh 2015).

**f) Using illustrations and Pictures:**

Pictures are an excellent tool for making the meaning of unknown words clear; Pictures connect students' prior knowledge to the teaching process and help them learn new words. The list of pictures includes posters, flashcards, wall charts, magazine pictures, stick figures, and photographs. Pictures for vocabulary teaching come from many sources. Apart from those drawn by the teacher or students, they

are sets of colorful pictures intended for schools. Pictures cut out of newspapers and magazines are very useful as well.

The teacher can use learning materials provided by the school such as books and course books which contain a vast number of attractive pictures that presents the meaning of basic words. They can also make their own visual aids. Visual support helps learners understand the meaning and helps to make the word more memorable.

**g) Drilling**

Drilling is employed to make learners get accustomed to the word form, especially to how it sounds. To make learners more familiar with the word, drilling should be clear and natural (Thornbury, 2002). Drilling is very necessary since learners need to say the word to themselves as they learn it to recall the words from memory (Ellis & Beaton, 1993, in reading, 2000).

**h) Translation:**

Even though translation does not create a need or motivation for the learners to think about word meaning (Cameron, 2001), in some situations translation could be effective for teachers, such as when dealing with incidental vocabulary (Thornbury, 2002), checking student's comprehension, and pointing out similarities or differences between first and second language, when these are likely to cause errors (Takač, 2008).

**i) Spelling the Word:**

The primary means of spelling is actually memorizing words (Simonsen & Gunter, 2001, in Reed, 2012). Word spelling needs to be considered since spelling form of English words is not always be inferred by the pronunciation.

**j) Playing vocabulary games :**

Vocabulary game is one of the best ways to keep learners engaged and strengthen their vocabulary skills. Games are activities that include language and wordplay. It includes word Association, hang Man, board Race, Taboo Words, Chalkboard Acronym, Categories, Last Man Standing, Bingo...

**k) Songs**

The use of English songs can improve the quality of vocabulary in teaching learning process. It happened because songs can stimulate the students to achieve the new words that they had already listened. It is supported by Griffie (2001) that song is a part of music that you sing through words.

**l) Use cognates:** a word in a language that has the same origin as a word in a different language.

**m) Dictionary use :**

Using dictionaries in class is a great technique for learners to increase their vocabulary, and educate them about synonyms, antonyms, root words, and related words, which is another way to learn vocabulary. Nation (2008) points out that a dictionary can help the learners in three major ways; understanding words that they meet in reading and listening, helping learners to find words that they need for speaking and writing, and helping them remember words.

In addition to the strategies mentioned above, teachers can use other techniques such as; introducing words in pairs, giving definitions, Using antonyms and synonyms, Enumeration ...etc. Therefore, he can make a combination of more than one technique to maximize learners' understanding and help them store the new vocabulary in long time memory retention.

## **Conclusion**

From what has been discussed above, vocabulary knowledge in English learning is one of the most important subjects for students in EFL classes. Teachers should develop strategies in the class to strengthen learners' vocabulary in order to achieve remarkable results in developing the communication competence of learners in both oral and written forms to achieve a basic of English.

# **Chapter two: Mind Mapping Strategy.**

## **Chapter two: mind mapping**

### **Introduction**

The new Algerian curriculum for teaching-learning English for middle school ( May 2015) have emphasized the importance of the four years of middle school on the intellectual, emotional, physical and social development of the child. Then, teachers should be aware of the teaching methods and techniques which facilitates students' learning and have them confront significant and meaningful situations where their personal endowments will heavily depend on their cognitive, psychomotor and affective resources while also taking into account the influence of the social and cultural interaction with the world around them.( 2MS teacher's guide page 8)

#### **1.2.1 The nature of Mind Mapping Strategy:**

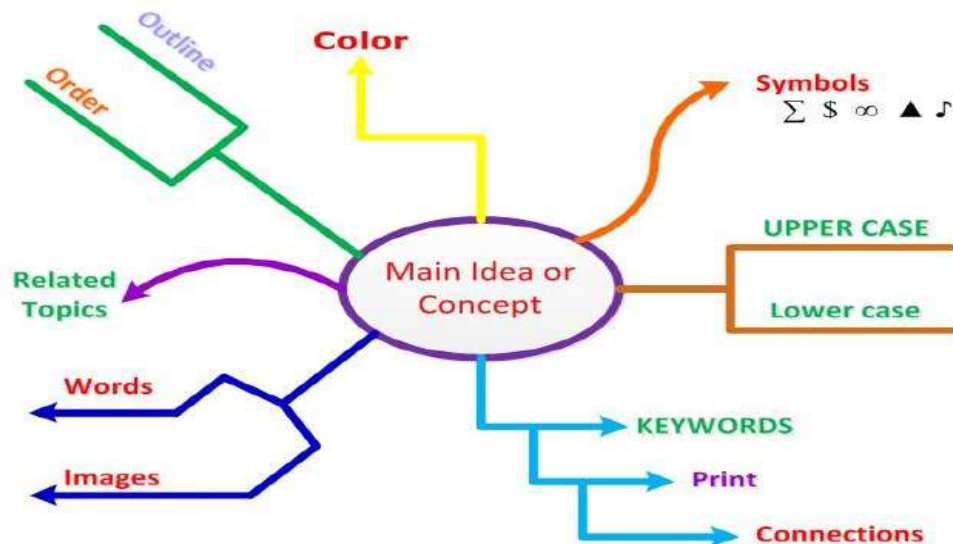
Mind Mapping is a revolutionary technique developed by English author and educational consultant Tony Buzan in 1970. It is a creative note taking technique in a visualization and graphic forms that is used to make people find it easy to enter information into their brains, keeping information in a long term memory and taking it out from their brains easily by engaging imagination and association (Buzan 2006: 6 ; Buzan 2008: 10).

Based on Buzan's definition to Mind Mapping Strategy; the most important concepts of using Mind Mapping are:

- Mind Mapping is a creative note taking techniques.
- It is a technique used by people to represent ideas into visualization and graphic forms where one idea is connected to other ideas by using branches.
- Mind Mapping helps people to enter the information into their brains, keep it in their long-term memory for a long time and recall the information saved in their memories easily.

- Mind mapping engages the use of imagination and association in its application. This means that in presenting ideas into mind mapping diagrams, people enclose imagination stimulators such as pictures, symbols, and colors to present ideas clearly and use association techniques to help them build their senses to the new concepts.
- Mind mapping can be used in every activity where thoughts, planning, recall or creativity is involved.

Besides, Mind mapping is also a learning system that is often used to help students to learn effectively, efficiently and happily. Mento, Martinelli and Jones (1999) found the use of mind mapping for understanding case studies very useful among post graduate EMBA students. According to Zhang at al (2010)” It fully utilizes both the left and right brain, and can be used as a memory aided tool in any field of study, work and life. The use of mind mapping can be assisted with “the adoption of colors, images, codes, and multidimensional approaches to help human memory, so that one could concentrate the mind on the central part, which is, the crucial subject”.



**Figure 2.1** Mind Map template

Mind Mapping Strategy MMS is categorized under graphic organizers since it shares the same characteristics and underlying theoretical basis as graphic organizers. A graphic organizer is a powerful instructional tool and strategy in vocabulary development (Smith, 2002; Teal, 2003). Graphic organizers are "visual displays



teachers use to organize information in a manner that makes the information easier to understand and learn" (Meyen, Vergason, & Whelan, 1996, p. 132).

### **1.2.2 Benefits of Mind mapping strategy (MMS)**

Mind Mapping Strategy MMS can be beneficial for both teachers and learners.

#### **a) For teachers:**

Mind Mapping Strategy MMS helps the teacher to reach all members of his/her class by attracting their attention and taking all types of intelligences into consideration. Unlike old fashioned methods, the teacher is in an observer role, apart from dictating and being the authority in the classroom. He becomes a facilitator or coordinator after giving the basic theoretical frame in words then the students focus on the key words and link the images into their brains. This method contributes teachers in diversifying the methods they apply during education process and reaching distinct types of learners. According to (Nesbit & Adesope, 2006) MMS gives the teacher the chance of observing his/her students thoughts as it provides them visualize their thought and letting them personalize the educational process according to their intelligence types and way of learning.

#### **b) For students:**

Mind Mapping Strategy MMS puts the learner into the center of the learning process and appoints him/her an active role. It provides cooperative learning atmosphere, and learner can construct the learning process according to his/her subjective way of acquisition. Moreover, Learning is performed subconsciously using Mind Mapping Strategy MMS, because of that learner's brain can focus on more than one mission simultaneously. There are some important components of this technique such as key 20 words, visual elements and colors to support brain's operations such as recalling, creating, over-generalizing etc. Unlike traditional teaching and learning methods there is no linear process which limits the mind and prevents it from creating new ideas.

### **1.2.3 Stages to make a Mind Map**

Buzan (2005: 15) mentions seven stages to make a mind mapping as follows:

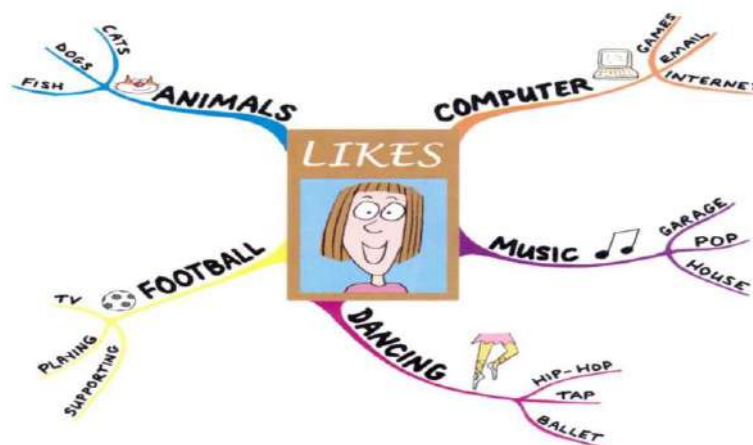
- 1- **Putting the main idea in the center:** the starting idea in the center is designed to give freedom to expand the ideas to any direction which is a perfect example of radiant thinking in action. Placing the main idea or topic in the middle of page will give maximum space for other ideas to radiate out from the center.
- 2- **Using a picture or photo for the central idea:** Picture and photo are important enough in making mind mapping. It is because pictures have a strong impact on imagination and memory. It also pleases sight and keeps attention focused.
- 3- **Using colors Color:** makes mind map more alive and adds the energy on creative thinking. It can be used to capture eye's attention and interest.
- 4- **Connecting main branches to the center picture and connect the second and third branches to the first and second, and so on:** because the brain works according to the association. Human brain likes to relate two or more things all at once. The connections among branches make it easier to understand and remember.
- 5- **Making a curve line connector, not a straight line:** a mind map with straight lines is boring to the eyes and does not reflect its creative intent, but the curve branches like a tree branches are more interesting for eyes.
- 6- **Using one key word for each line:** It is because a single key word gives more energy and flexibility for mind mapping.
- 7- **Using pictures Image and symbol are easy to remember,** colors, drawings, personal codes stimulate new creative association. So, mind mapping is a simple technique that can be used to note creatively and effectively. Besides, it can help the students to memorize information.

By using mind mapping, people can emerge and organize ideas to be a good sentence. Moreover, Mind Mapping Strategy MMS can make the students happy in studying because there are colorful pictures.

### 1.2.4 Using Mind mapping strategy (MMS) in EFL classroom:

EFL teacher can use Mind mapping strategy (MMS) in the following phases:

**1.2.4.1 As presentation phase in (PPU) speaking lesson:** during this stage, teacher can use MMS to make learners exposed to the new language and skills by brainstorming and Eliciting vocabulary. Vygotsky (quoted in Armstrong 2000) once claimed that a thought is like a cloud shedding a shower of words. Brainstorming is like this cloud, where learners produce a lot of thoughts which when collected and put on the whiteboard, gives a clearer idea of the topic being discussed. The ideas then placed and organized in a specific task. This strategy encourages original thoughts and creativity.



**Figure 2.2** Brainstorming through Mind mapping strategy.

( Tony Buzan, Mind-Mapping-for-kids, page 12)

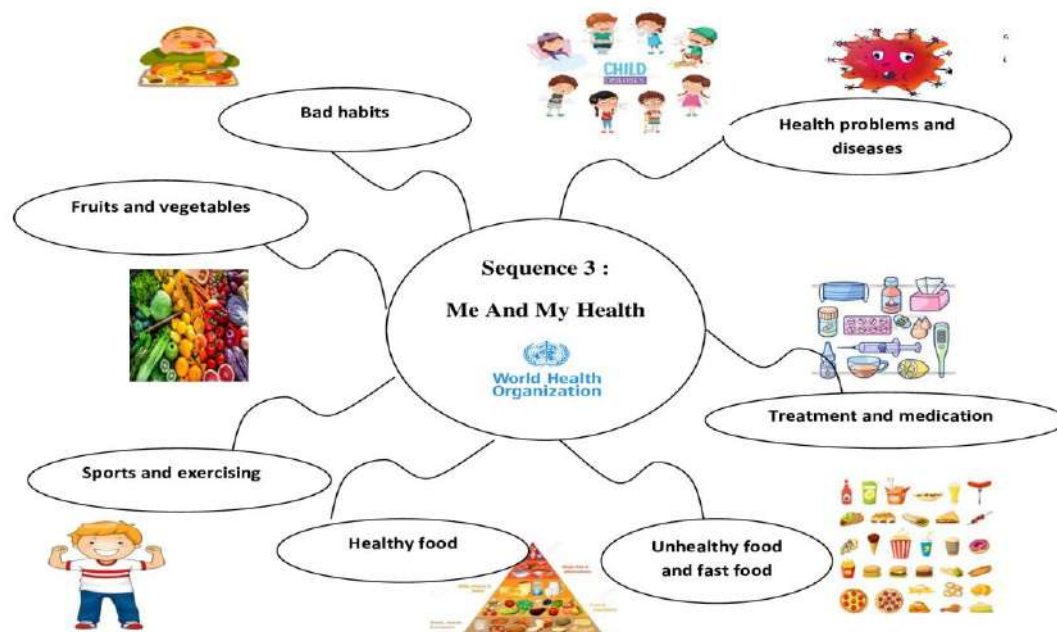
**1.2.4.2As pre- phase in (PDP) listening reading lessons:** During this stage, teacher uses Mind Mapping Strategy (MMS) to provide his learner with the key vocabulary he will listen in the script or read in the passage. Teacher can introduce MMS in Pre-reading or pre-listening as (ice-breaking – warming up – lead-in phases). This preparation work helps students get connect the new information to what they already

know, generate interest in a topic and activate the student's prior knowledge. (IMS teacher's guide, page 63)

**1.2.4.3 As pre- writing phase in writing lessons:** during this stage, teacher can use MMS to elicit learners' vocabulary, introduce new words and ideas, and organize them before writing the first draft. Chan (2004) studied whether Mind mapping strategy (MMS) can be used as a pre-writing strategy to help explore and generate ideas for writing. He suggests that Mind Mapping tend to help students plan in the following ways:

- to have clearer ideas.
- to have better organization of ideas.
- to have better ordering of ideas.
- to include more relevant and appropriate ideas.
- to delineate more ideas.
- to have better paragraphing.

**1.2.4.4 Initial problem solving situation (Starting off/input):** during this stage, the teacher can use MMS to introduce the sequence topic related to the environment and interests of the learners then break it into learning objectives and lessons ( teacher's guide, page 40) . MMS gives the learners a general view of the sequence and make them aware about what are they going to encounter. Moreover, the teacher can provide them with the maximum lexis of the whole sequence integrated in a Mind map. As a result, learners won't find many problems in understanding the meaning of some vocabulary the next lessons. They just have to remember what they have seen in the initial situation.



**Figure 2.3** Sequence three (Me and My Health Initial Situation).

## Conclusion

As shown in this chapter, Mind Mapping Strategy (MMS) is a useful technique for both middle school teachers and learners. MMS helps the teachers in making well and motivating presentations of the lessons; hence achieving the planned learning objectives. MMS is also beneficial for learners since it helps them involving their prior knowledge, developing autonomous learning and raising their creativity. In addition to facilitating vocabulary learning and use; MMS makes the learners more engaged, active and motivated in the class. However, improving vocabulary using Mind mapping strategy (MMS) that affect learners' speaking and writing skills, yet to be implemented in teaching vocabulary strategies is still a challenging question which requires investigation.

## **Part two: Research Methodology.**

## **Introduction**

This part aims at presenting the research methodology used to investigate the effectiveness of using Mind mapping strategy (MMS) in improving Learner's vocabulary. It describes research methods involved to fulfill this study, sampling and population of the study, research instruments and data collection. In addition to a conclusion which contains a summary of what has been tackled in this part.

### **2.1 Research Methods:**

This study attempts to explore the effects of using Mind Mapping Strategy MMS on vocabulary learning. To fulfill this purpose, and to test the hypothesis mentioned previously. The students were assigned to an experimental design. It involves a pre-test, which aims at investigating students' current level in vocabulary; post-test, which aims at measuring students' improvement in learning and using vocabulary. The quasi-experimental study is conducted in which learners are provided with two tasks. The first was a gap-filler which is a valid test format and an excellent way for assessing productive vocabulary because learners were asked to write the appropriate words in blanks. Additionally, gap-filler task is a good task to assess learners' contextualization and reinforce vocabulary. The second task was list word completion task which is a good way of detecting memory for words presented previously. It is one of the best techniques to measure learners' improvement in lexis related to the topic.

According to the conventional view, the Discrete-point approach in language testing is employed to assess learner knowledge of particular elements of language such as word meaning, tenses, sentence pattern, sound contrast, speaking fluency, etc. However, in the last thirty years of the 20th century, there is a new effort to adopt the communicative approach to language assessment. Read (2000) suggested some procedures as three dimension of assessment which consists of Discrete-embedded, selective - comprehensive, context-independent - context-dependent. The study focuses on vocabulary appropriateness and vocabulary richness as two criteria to measure the vocabulary improvement of the learners.

## **2.2. Sampling and Population:**

The population of this research was second year pupils of Abd-ELhafide Sanhadri Middle School, Sidi-Khouiled, Ouargla. The second-year pupils consist of 8 classes; every single class is about 28 pupils. So the total number of 2MS is around 224 pupils for the academic year 2021-2022.

This study adopted second-year pupils as the sampled population because they are young; they like learning by playing, and they are more attracted to using colors, shapes, and drawings. In addition, they lack vocabulary; their lexis is limited to MS1 topics (family, school, and friends). Moreover, 2MS pupils are not motivated enough to learn because of their hyperactivity in the class, so they need a strategy to attract their attention and facilitate learning; Mind Mapping strategy (MMS) seems to be the best technique because it consists of colors, pictures, and some keywords that can also make the learning process more enjoyable.

## **2.3 Description of the quasi-experiment:**

The quasi experiment is carried out in the Sanhari Middle school, Sidi-Kouiled, Ouargla for 28 2MS pupils; starting with a pre-test that involves two activities closely selected. The first activity aims at revealing the pupils' ability to fill each gap with its appropriate word according to the context of the sentence to check their understanding of the meaning of words and their correct use. The second activity aims at discovering pupils' ability to elicit words from the list given and give other words on the same topic; four lists were given; nouns, gerunds, and verbs.

The general objective of the pre-test is investigating the current level of pupils' vocabulary in terms of the appropriateness of vocabulary use in context in addition to vocabulary richness. Afterwards, the teacher presents the session based on the following steps: First of all, the learning objective of the session was "by the end of the session, learners will be able to express likes, hobbies and interests using vocabulary related to them and verbs such as; like, love, prefer, enjoy, interested in, keen on and fond of) (see Appendix E: lesson plan). The teacher brainstorm the session by asking learners some questions such as "What do you do after school?" or in your free time such as on weekends and holidays? The teacher here draws pupils'



attention to the topic, and they start to interact. Moreover, he presents the Mind Mapping strategy (MMS) that they encounter for the first time by drawing a bubble in the middle of the board and writing “ I like “, he explains that we use the verb like to talk about interests and hobbies. The teacher is responsible for exposing pupils to mind mapping strategy and for monitoring the session by eliciting pupils’ vocabulary and introducing new ones. He elicits different vocabulary related to pupils’ interests and draws the mind map on the whiteboard.

After finishing the treatment, pupils were asked to form sentences from the Mind Map, to stimulate their creativity and produce oral feedback on what they have encountered. After that, they were asked to do the post-test which aims at measuring students’ improvement in learning and using of vocabulary.

## 2.4 Technique of Data Analysis.

The data from pre-test and post-test is analyzed through the following steps:

1. Scoring student vocabulary test.

Scoring the students’ answer by using the following formula:

$$\text{Score} = \frac{\text{the correct answer}}{\text{number of items}} \times 10$$

2. To score of the student’s answer of the vocabulary test by using the following formula.

**Table 2.1** Vocabulary.

|           | <b>criteria</b>  | <b>score</b> | <b>Pupils’ answer</b>          |
|-----------|------------------|--------------|--------------------------------|
| <b>01</b> | <b>correct</b>   | <b>1</b>     | <b>Pupils’ answer is true</b>  |
| <b>02</b> | <b>incorrect</b> | <b>0</b>     | <b>Pupils’ answer is false</b> |

$$\text{Score} = \frac{\text{students correct answer}}{\text{Maximum score}} \times 100$$

(puskur in Salmi,2012:28)

3. To classify the students’ score, there were five classifications which was used as follows:

- a. 8.4 – 10 as excellent
- b. 6.7 – 8.3 as good
- c. 5.1 – 6.6 as acceptable
- d. 3.4 – 5 as poor
- e. 0 – 3.3 as very poor.

4. Calculating the mean score by using the following formula:

$$\bar{X} = \frac{\Sigma X}{N}$$

Where:  $\bar{X}$  = Mean.

$\Sigma$  = Total raw score.

N = the total number of the student.

(Gay, 2006: 320)

5. The percentage of the students' vocabulary was identified by using the formula as follow

$$\% = \frac{X_2 - X_1}{X_1} \times 100$$

Where: % = the percentage of the student's improvement.

X1 = the mean score of pre-test.

X2 = the mean score of post-test.

(Arikunto, 2006:23)

# **Part Three: Data Presentation, Analysis and Discussion**

## **Introduction:**

This part presents the findings and discussion of the research. The findings consist of the data obtained through achievement tests to see the pupils' improvement after being taught using the Mind Mapping strategy (MMS).

### **3.1. The analysis and interpretation of pre-test results**

#### **a. The analysis of pre-test results in vocabulary appropriateness**

**Table 3.1** Pre-test scores and percentages in vocabulary appropriateness

| <b>Learners</b>   | <b>Correct answers</b> | <b>Pre-test score</b> | <b>Percentage of correct answers</b> |
|-------------------|------------------------|-----------------------|--------------------------------------|
| <b>Learner 1</b>  | 2                      | 3.3                   | 33.33%                               |
| <b>Learner 2</b>  | 2                      | 3.33                  | 33.33%                               |
| <b>Learner 3</b>  | 2                      | 3.33                  | 33.33%                               |
| <b>Learner 4</b>  | 4                      | 6.6                   | 66.66%                               |
| <b>Learner 5</b>  | 2                      | 3.33                  | 33.33%                               |
| <b>Learner 6</b>  | 0                      | 0                     | 0                                    |
| <b>Learner 7</b>  | 1                      | 1.66                  | 16.66%                               |
| <b>Learner 8</b>  | 3                      | 5                     | 50%                                  |
| <b>Learner 9</b>  | 6                      | 10                    | 100%                                 |
| <b>Learner 10</b> | 1                      | 1.66                  | 16.66%                               |
| <b>Learner 11</b> | 0                      | 0                     | 0                                    |
| <b>Learner 12</b> | 4                      | 6.6                   | 66.66%                               |
| <b>Learner 13</b> | 2                      | 3.33                  | 33.33%                               |
| <b>Learner 14</b> | 2                      | 3.33                  | 33.33%                               |
| <b>Learner 15</b> | 0                      | 0                     | 0                                    |
| <b>Learner 16</b> | 4                      | 6.6                   | 66.66%                               |

|                   |   |            |               |
|-------------------|---|------------|---------------|
| <b>Learner 17</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 18</b> | 0 | 0          | 0             |
| <b>Learner 19</b> | 6 | 10         | 100%          |
| <b>Learner 20</b> | 6 | 10         | 100%          |
| <b>Learner 21</b> | 0 | 0          | 0             |
| <b>Learner 22</b> | 6 | 10         | 100%          |
| <b>Learner 23</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 24</b> | 6 | 10         | 100%          |
| <b>Learner 25</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 26</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 27</b> | 2 | 3.33       | 33.33%        |
| <b>Learner 28</b> | 3 | 5          | 50%           |
| <b>Mean</b>       | - | <b>4.7</b> | <b>47.62%</b> |

The table above represents scores and percentage of the pre-test in vocabulary appropriateness. According to the results, pupils can be classified into(03) main categories as following: the first category contains (14) pupils who have scored under(50%) of the total number of correct answers and which represents the largest category; the second category contains (7) pupils who have scored between (50%-70%) of the total number of the correct answers that seems to be equal to the third category which contains also (7) students who have scored more than (70%) of the total number of correct answers. The mean of the pre-test is **(4.7)** which represents **(47.62%)** of the total number of correct answers.

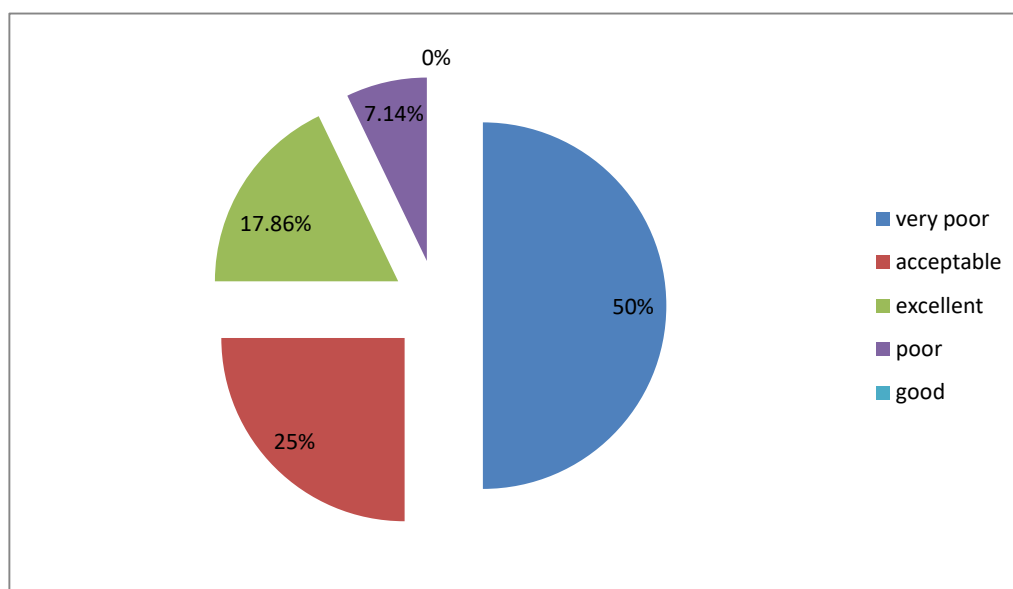
**Table 3.2** Pre-test frequency and percentage in vocabulary appropriateness of the whole class.

| NO. | Score     | Category  | Frequency | Percentage |
|-----|-----------|-----------|-----------|------------|
| 01. | 8.4 – 10  | Excellent | 5         | 17.86%     |
| 02. | 6.7 – 8.3 | Good      | -         | 0%         |

|     |           |            |    |       |
|-----|-----------|------------|----|-------|
| 03. | 5.1 – 6.6 | acceptable | 7  | 25%   |
| 04. | 3.4 – 5   | poor       | 2  | 7.14% |
| 05. | 0 – 3.3   | Very poor  | 14 | 50%   |

The table above represents scores and percentage of the pre-test in vocabulary appropriateness of the whole class. According to the results, 50% of pupils were classified as very poor learners, 7.14% were poor, 25% were categorized as acceptable, and 18% were excellent. The classification is presented clearly in the figure below.

**Figure 3.1:** Pre-test results in vocabulary appropriateness.



### **b. The interpretation of pre-test results in vocabulary appropriateness**

According to **Table 3.1, Table 3.2 and Figure 3.1;** the grades of pupils varied from one to another which shows a variation in students' linguistic competence. We can notice that 14 pupils who represent 50% of the whole class have scored under (50%) which indicates that the learners didn't understand about the material that had been given because lack acknowledgement of vocabulary. Moreover, they couldn't differentiate between the verb, noun and gerund and the appropriate use of them which led them fail in the first task. The second category which represents 25%

who have scored between 50% and 70% that is similar to the third category that have scored more than 70%, this reveals that they have an acceptable vocabulary competence, although, they still in need of improvement. In the light of what has been mentioned previously, students were exposed to a lesson using Mind map strategy (MMS) followed by a post test to check to what extent their level has improved.

**c. The analysis of pre-test results in vocabulary richness**

**Table 3.3** Pre-test scores and percentages in vocabulary richness.

| learners          | L1 | L2 | L3 | L4 | Total | score | percentage |
|-------------------|----|----|----|----|-------|-------|------------|
| <b>Learner 1</b>  | 0  | 1  | 0  | 1  | 2     | 1.6   | 16.66%     |
| <b>Learner 2</b>  | 2  | 0  | 0  | 0  | 2     | 1.6   | 16.66%     |
| <b>Learner 3</b>  | 2  | 1  | 0  | 2  | 5     | 4.1   | 41.66%     |
| <b>Learner 4</b>  | 1  | 3  | 0  | 3  | 7     | 5.8   | 58.33%     |
| <b>Learner 5</b>  | 1  | 0  | 0  | 3  | 4     | 3.3   | 33.33%     |
| <b>Learner 6</b>  | 0  | 0  | 0  | 0  | 0     | 0     | 0%         |
| <b>Learner 7</b>  | 2  | 1  | 0  | 3  | 6     | 5     | 50%        |
| <b>Learner 8</b>  | 2  | 2  | 1  | 3  | 8     | 6.6   | 66.66%     |
| <b>Learner 9</b>  | 2  | 1  | 0  | 3  | 6     | 5     | 50%        |
| <b>Learner 10</b> | 2  | 0  | 0  | 3  | 5     | 4.1   | 41.66%     |
| <b>Learner 11</b> | 0  | 0  | 0  | 0  | 0     | 0     | 0%         |
| <b>Learner 12</b> | 1  | 2  | 0  | 2  | 5     | 4.1   | 41.66%     |
| <b>Learner 13</b> | 2  | 0  | 0  | 0  | 2     | 1.6   | 16.66%     |
| <b>Learner 14</b> | 0  | 0  | 0  | 3  | 3     | 2.5   | 25%        |
| <b>Learner 15</b> | 0  | 0  | 0  | 2  | 2     | 1.6   | 16.66%     |
| <b>Learner 16</b> | 2  | 2  | 0  | 3  | 7     | 5.8   | 58.33%     |
| <b>Learner 17</b> | 2  | 2  | 0  | 0  | 4     | 3.3   | 33.33%     |

|                   |    |    |   |    |     |            |               |
|-------------------|----|----|---|----|-----|------------|---------------|
| <b>Learner 18</b> | 1  | 1  | 0 | 3  | 5   | 4.1        | 41.66%        |
| <b>Learner 19</b> | 3  | 3  | 0 | 3  | 9   | 7.5        | 75%           |
| <b>Learner 20</b> | 3  | 2  | 0 | 3  | 8   | 6.6        | 66.66%        |
| <b>Learner 21</b> | 2  | 0  | 0 | 1  | 3   | 2.5        | 25%           |
| <b>Learner 22</b> | 3  | 3  | 1 | 2  | 9   | 7.5        | 75%           |
| <b>Learner 23</b> | 2  | 2  | 2 | 3  | 9   | 7.5        | 75%           |
| <b>Learner 24</b> | 2  | 1  | 0 | 3  | 6   | 5          | 50%           |
| <b>Learner 25</b> | 2  | 0  | 1 | 3  | 6   | 5          | 50%           |
| <b>Learner 26</b> | 2  | 0  | 1 | 3  | 6   | 5          | 50%           |
| <b>Learner27</b>  | 0  | 2  | 0 | 3  | 5   | 4.1        | 41.66         |
| <b>Learner28</b>  | 3  | 2  | 0 | 3  | 8   | 6.6        | 66.66%        |
| <b>Total</b>      | 44 | 31 | 6 | 61 | 142 | <b>4.2</b> | <b>42.26%</b> |

The table above represents scores and percentage of the pre-test in vocabulary richness. According to the results, pupils can be classified into (03) main categories as following: the first category contains (20) pupils who have scored under (50%) of the total number of vocabulary related to the topic and which represents the largest category; the second category contains (5) pupils who have scored between (50%-70%). The third category contains (3) pupils who have scored more than (70%). The mean of the pre-test is (4.22) which represents (42.26%) of the total number of vocabulary related to the topic. The mean of the pre-test is (**4.2**) which represents (**42.26%**) of the total number of correct answers.

**Table 3.4** Pre-test frequency and percentage in vocabulary richness of the whole class.

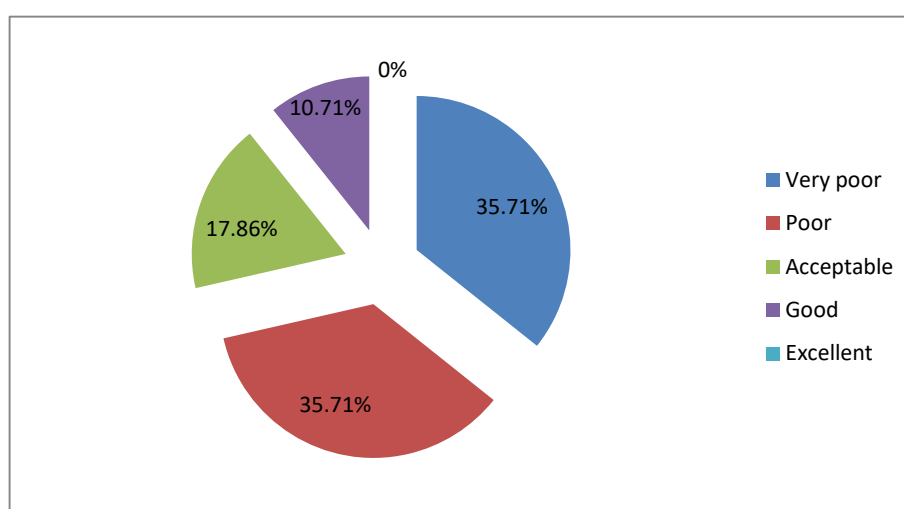
| NO. | Score     | Category   | Frequency | Percentage |
|-----|-----------|------------|-----------|------------|
| 01. | 8.4 – 10  | Excellent  | -         | 0%         |
| 02. | 6.7 – 8.3 | Good       | 3         | 10.71%     |
| 03. | 5.1 – 6.6 | acceptable | 5         | 17.86%     |



|     |         |           |    |        |
|-----|---------|-----------|----|--------|
| 04. | 3.4 – 5 | poor      | 10 | 35.71% |
| 05. | 0 – 3.3 | Very poor | 10 | 35.71% |

The table above represents Pre-test frequency and percentage in vocabulary richness of the whole class. According to the results, 35.71% of pupils were classified as very poor learners, and 35.71% were poor, 17.86% were categorized as acceptable, and 10.71% were good. The classification is presented clearly in the figure below.

**Figure 3.2:** Pre-test results in vocabulary richness.



#### **d. The interpretation of pre-test results in vocabulary richness**

According to **Table 3.3, Table 3.4 and Figure 3.2;** we can notice that 20 pupils who represent 71% of the whole class have scored under (50%) which indicates that the learners didn't understand the words given in the four lists; the words were unfamiliar to them, especially the first list which was related to hobbies and interests. As a result, they couldn't add more words to the list. Furthermore, their lack of vocabulary background about the topic prevents them from constructing new words. The second category contains (5) pupils who have scored between (50%-70%). The third category contains (3) pupils who have scored more than (70%). This reveals that they have acceptable level of vocabulary especially the fourth list which was about family members which they encounter during the first year. Also, they could elicit words by adding the "ing" form in order to complete the second word list such

us; drawing, watching, reading... Despite of their acceptable level in vocabulary background, yet they need working for excellence in addition to the first category which needs good strategy to improve their vocabulary richness. In the light of what has been mentioned previously, students were exposed to a lesson using Mind map strategy (MMS) followed by a post test to check to what extent their level has improved.

### 3.2. The analysis and interpretation of post-test results

#### a. The analysis of post-test results in vocabulary appropriateness

**Table 3.5** Post-test scores and percentages in vocabulary appropriateness.

| <b>Learners</b>   | <b>Correct answers</b> | <b>Post-test score</b> | <b>Percentage of correct answers</b> |
|-------------------|------------------------|------------------------|--------------------------------------|
| <b>Learner 1</b>  | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 2</b>  | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 3</b>  | 5                      | 8.3                    | 83.33%                               |
| <b>Learner 4</b>  | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 5</b>  | 3                      | 5                      | 50%                                  |
| <b>Learner 6</b>  | 0                      | 0                      | 0                                    |
| <b>Learner 7</b>  | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 8</b>  | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 9</b>  | 6                      | 10                     | 100%                                 |
| <b>Learner 10</b> | 6                      | 10                     | 100%                                 |
| <b>Learner 11</b> | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 12</b> | 6                      | 10                     | 66.66%                               |
| <b>Learner 13</b> | 6                      | 10                     | 100%                                 |
| <b>Learner 14</b> | 4                      | 6.6                    | 66.66%                               |
| <b>Learner 15</b> | 3                      | 5                      | 50%                                  |

|                   |   |            |               |
|-------------------|---|------------|---------------|
| <b>Learner 16</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 17</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 18</b> | 1 | 1.6        | 16.66%        |
| <b>Learner 19</b> | 6 | 10         | 100%          |
| <b>Learner 20</b> | 6 | 10         | 100%          |
| <b>Learner 21</b> | 0 | 0          | 0             |
| <b>Learner 22</b> | 6 | 10         | 100%          |
| <b>Learner 23</b> | 6 | 10         | 100%          |
| <b>Learner 24</b> | 6 | 10         | 100%          |
| <b>Learner 25</b> | 4 | 6.6        | 66.66%        |
| <b>Learner 26</b> | 6 | 10         | 100%          |
| <b>Learner 27</b> | 6 | 10         | 100%          |
| <b>Learner 28</b> | 6 | 10         | 100%          |
| <b>Mean</b>       | - | <b>7.3</b> | <b>73.80%</b> |

The table above represents scores and percentage of the post-test in vocabulary appropriateness. According to the results, pupils can be classified into (03) main categories as following: the first category contains (3) pupils who have scored under (50%) of the total number of correct answers. The second category contains (13) pupils who have scored between (50%-70%) of the total number of the correct answers. The third category contains (12) students who have scored more than (70%) of the total number of correct answers. The mean of the post-test is (7.3) which represents (73.80%) of the total number of correct answers.

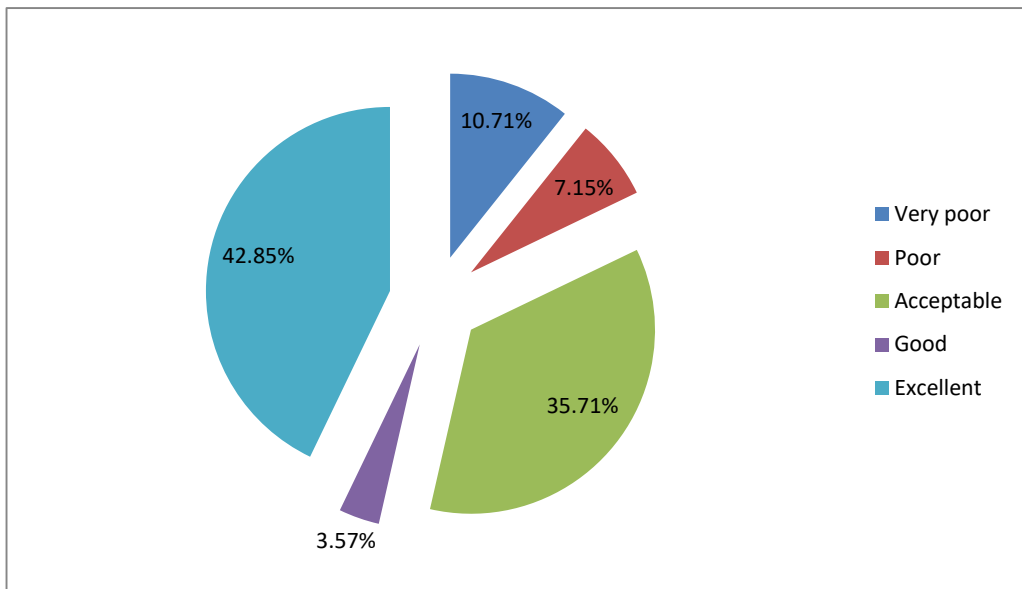
**Table 3.6** Post-test frequency and percentage in vocabulary appropriateness of the whole class.

| NO. | Score     | Category  | Frequency | Percentage |
|-----|-----------|-----------|-----------|------------|
| 01. | 8.4 – 10  | Excellent | 12        | 42.85%     |
| 02. | 6.7 – 8.3 | Good      | 1         | 3.57%      |

|     |           |            |    |        |
|-----|-----------|------------|----|--------|
| 03. | 5.1 – 6.6 | acceptable | 10 | 35.71% |
| 04. | 3.4 – 5   | poor       | 2  | 7.15%  |
| 05. | 0 – 3.3   | Very poor  | 3  | 10.71% |

The table above represents scores and percentage of the post-test in vocabulary appropriateness of the whole class. According to the results, 10.71% of pupils were classified as very poor learners, 3.75% were poor, 35.71% were categorized as acceptable, 3.57% good and 42.85% were excellent. The classification is presented clearly in the figure bellow.

**Figure 3.3:** Post-test results in vocabulary appropriateness.



**b. The interpretation of post-test results in vocabulary appropriateness**

According to the findings of the post-test, a remarkable improvement appears with pupils who have scored more than 70% which represents 42.85% which proves that they had benefited from using (MMS) to improve their vocabulary. However, 10.71% of pupils have scored under 50 which reveal that they did not benefit from the using (MMS) as a technique to improve their vocabulary.

**c. The analysis of post-test results in vocabulary richness**

**Table 3.7** Post-test scores and percentages in vocabulary richness.

| <b>learners</b>   | <b>L1</b> | <b>L2</b> | <b>L3</b> | <b>L4</b> | <b>Total</b> | <b>score</b> | <b>percentage</b> |
|-------------------|-----------|-----------|-----------|-----------|--------------|--------------|-------------------|
| <b>Learner 1</b>  | 0         | 2         | 1         | 3         | 6            | 5            | 50%               |
| <b>Learner 2</b>  | 3         | 0         | 0         | 3         | 6            | 5            | 50%               |
| <b>Learner 3</b>  | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |
| <b>Learner 4</b>  | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |
| <b>Learner 5</b>  | 3         | 2         | 1         | 3         | 9            | 7.5          | 75%               |
| <b>Learner 6</b>  | 0         | 0         | 0         | 1         | 1            | 0.8          | 8.33%             |
| <b>Learner 7</b>  | 3         | 1         | 1         | 3         | 8            | 6.6          | 66.66%            |
| <b>Learner 8</b>  | 3         | 2         | 3         | 3         | 11           | 9.1          | 91.66%            |
| <b>Learner 9</b>  | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |
| <b>Learner 10</b> | 3         | 3         | 2         | 3         | 11           | 9.1          | 91.66%            |
| <b>Learner 11</b> | 0         | 0         | 0         | 3         | 3            | 2.5          | 25%               |
| <b>Learner 12</b> | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |
| <b>Learner 13</b> | 3         | 3         | 0         | 3         | 9            | 7.5          | 75%               |
| <b>Learner 14</b> | 1         | 3         | 1         | 3         | 8            | 6.6          | 66.66%            |
| <b>Learner 15</b> | 0         | 1         | 0         | 3         | 4            | 3.3          | 33.33%            |
| <b>Learner 16</b> | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |
| <b>Learner 17</b> | 3         | 3         | 0         | 3         | 9            | 7.5          | 75%               |
| <b>Learner 18</b> | 1         | 3         | 0         | 3         | 7            | 5.8          | 58.33%            |
| <b>Learner 19</b> | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |
| <b>Learner 20</b> | 3         | 3         | 1         | 3         | 10           | 8.3          | 83.33%            |
| <b>Learner 21</b> | 2         | 1         | 0         | 3         | 6            | 5            | 50%               |
| <b>Learner 22</b> | 3         | 3         | 3         | 3         | 12           | 10           | 100%              |

|                   |           |           |           |           |            |            |            |
|-------------------|-----------|-----------|-----------|-----------|------------|------------|------------|
| <b>Learner 23</b> | 3         | 3         | 3         | 3         | 12         | 10         | 100%       |
| <b>Learner 24</b> | 3         | 2         | 3         | 3         | 11         | 9.1        | 91.66%     |
| <b>Learner 25</b> | 3         | 0         | 1         | 3         | 7          | 5.8        | 58.33%     |
| <b>Learner 26</b> | 3         | 0         | 1         | 3         | 7          | 5.8        | 58.33%     |
| <b>Learner27</b>  | 3         | 2         | 3         | 3         | 11         | 9.1        | 91.66%     |
| <b>Learner28</b>  | 3         | 3         | 3         | 3         | 12         | 10         | 100%       |
| <b>Total</b>      | <b>67</b> | <b>58</b> | <b>45</b> | <b>82</b> | <b>252</b> | <b>7.5</b> | <b>75%</b> |

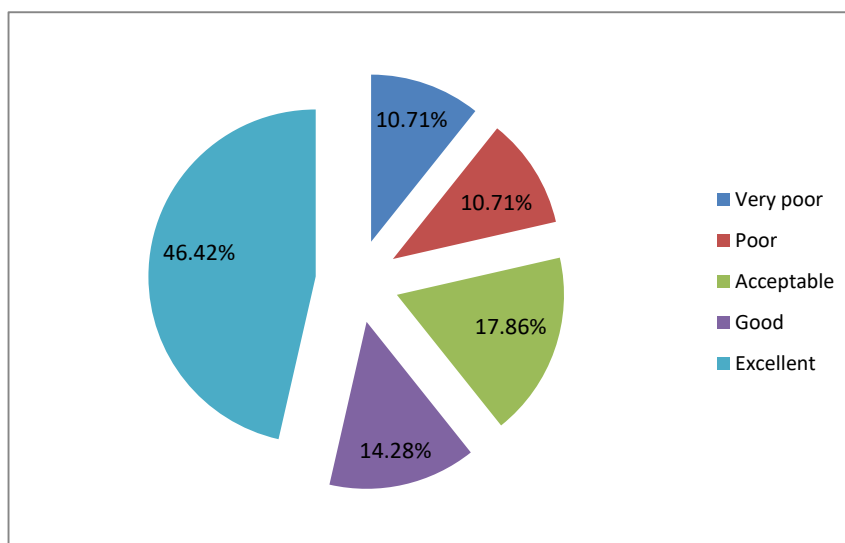
The table above represents scores and percentage of the post-test in vocabulary richness. According to the results, pupils can be classified into (03) main categories as following: the first category contains (3) pupils who have scored under (50%) of the total number of vocabulary related to the topic. The second category contains (8) pupils who have scored between (50%-70%). The third category contains (17) pupils who have scored more than (70%); which represents the largest category. The mean of the post-test is (7.5) which represents (75%) of the total number of vocabulary related to the topic.

**Table 3.8** Post-test frequency and percentage in vocabulary richness of the whole class.

| NO. | Score     | Category   | Frequency | Percentage    |
|-----|-----------|------------|-----------|---------------|
| 01. | 8.4 – 10  | Excellent  | 13        | <b>46.42%</b> |
| 02. | 6.7 – 8.3 | Good       | 4         | <b>14.28%</b> |
| 03. | 5.1 – 6.6 | acceptable | 5         | <b>17.86%</b> |
| 04. | 3.4 – 5   | poor       | 3         | <b>10.71%</b> |
| 05. | 0 – 3.3   | Very poor  | 3         | <b>10.71%</b> |

The table above represents scores and percentage of the post-test in vocabulary richness of the whole class. According to the results, 10.71% of pupils were classified as very poor learners, another 10.71% were poor, 17.86% were categorized as acceptable, 14.28% were good and 46.42% were excellent which represents the majority of pupils. The classification is presented clearly in the figure bellow.

**Figure 3.4:** Post-test results in vocabulary richness.



**d. The interpretation of post-test results in vocabulary richness**

According to the findings of the post-test, a remarkable improvement appears with pupils who have scored more than 70% which represents 46.42%. This proves that they had benefited from using (MMS) to improve their vocabulary richness especially with word list (1,2,4). However, 10.71% of pupils have scored under 50 which reveal that they did not benefit from the using (MMS) as a technique to improve their vocabulary. Furthermore, 28% of pupils have scored between 50% and 70% which indicates that (MMS) was to some extent beneficial in improving their vocabulary richness.

**3.3. The comparison between pre-test and post-test**

**a. The comparison between pre-test and post-test in vocabulary appropriateness**

**Table.3.9** The difference between Pre-test and post-test scores.

| learners         | Vocabulary appropriateness |           |            | Vocabulary richness |           |            |
|------------------|----------------------------|-----------|------------|---------------------|-----------|------------|
|                  | Pre-test                   | Post-test | difference | Pre-test            | Post-test | difference |
| <b>Learner 1</b> | 2                          | 4         | +2         | 2                   | 6         | +4         |

|                   |   |   |    |   |    |    |
|-------------------|---|---|----|---|----|----|
| <b>Learner 2</b>  | 2 | 4 | +2 | 2 | 6  | +4 |
| <b>Learner 3</b>  | 2 | 5 | +3 | 5 | 12 | +7 |
| <b>Learner 4</b>  | 4 | 4 | +0 | 7 | 12 | +7 |
| <b>Learner 5</b>  | 2 | 3 | +1 | 4 | 9  | +5 |
| <b>Learner 6</b>  | 0 | 0 | +0 | 0 | 1  | +1 |
| <b>Learner 7</b>  | 1 | 4 | +3 | 6 | 8  | +2 |
| <b>Learner 8</b>  | 3 | 4 | +1 | 8 | 11 | +3 |
| <b>Learner 9</b>  | 6 | 6 | +0 | 6 | 12 | +6 |
| <b>Learner 10</b> | 1 | 6 | +5 | 5 | 11 | +6 |
| <b>Learner 11</b> | 0 | 4 | +4 | 0 | 3  | +3 |
| <b>Learner 12</b> | 4 | 6 | +2 | 5 | 12 | +7 |
| <b>Learner 13</b> | 2 | 6 | +4 | 2 | 9  | +7 |
| <b>Learner 14</b> | 2 | 4 | +2 | 3 | 8  | +5 |
| <b>Learner 15</b> | 0 | 3 | +3 | 2 | 4  | +2 |
| <b>Learner 16</b> | 4 | 4 | +0 | 7 | 12 | +5 |
| <b>Learner 17</b> | 4 | 4 | +0 | 4 | 9  | +5 |
| <b>Learner 18</b> | 0 | 1 | +1 | 5 | 7  | +2 |
| <b>Learner 19</b> | 6 | 6 | +0 | 9 | 12 | +3 |
| <b>Learner 20</b> | 6 | 6 | +0 | 8 | 10 | +2 |
| <b>Learner 21</b> | 0 | 0 | +0 | 3 | 6  | +3 |
| <b>Learner 22</b> | 6 | 6 | +0 | 9 | 12 | +3 |
| <b>Learner 23</b> | 4 | 6 | +2 | 9 | 12 | +3 |
| <b>Learner 24</b> | 6 | 6 | +0 | 6 | 11 | +5 |
| <b>Learner 25</b> | 4 | 4 | +0 | 6 | 7  | +1 |
| <b>Learner 26</b> | 4 | 6 | +2 | 6 | 7  | +1 |



|                   |   |   |           |   |    |           |
|-------------------|---|---|-----------|---|----|-----------|
| <b>Learner 27</b> | 2 | 6 | <b>+4</b> | 5 | 11 | <b>+6</b> |
| <b>Learner 28</b> | 3 | 6 | <b>+3</b> | 8 | 12 | <b>+4</b> |

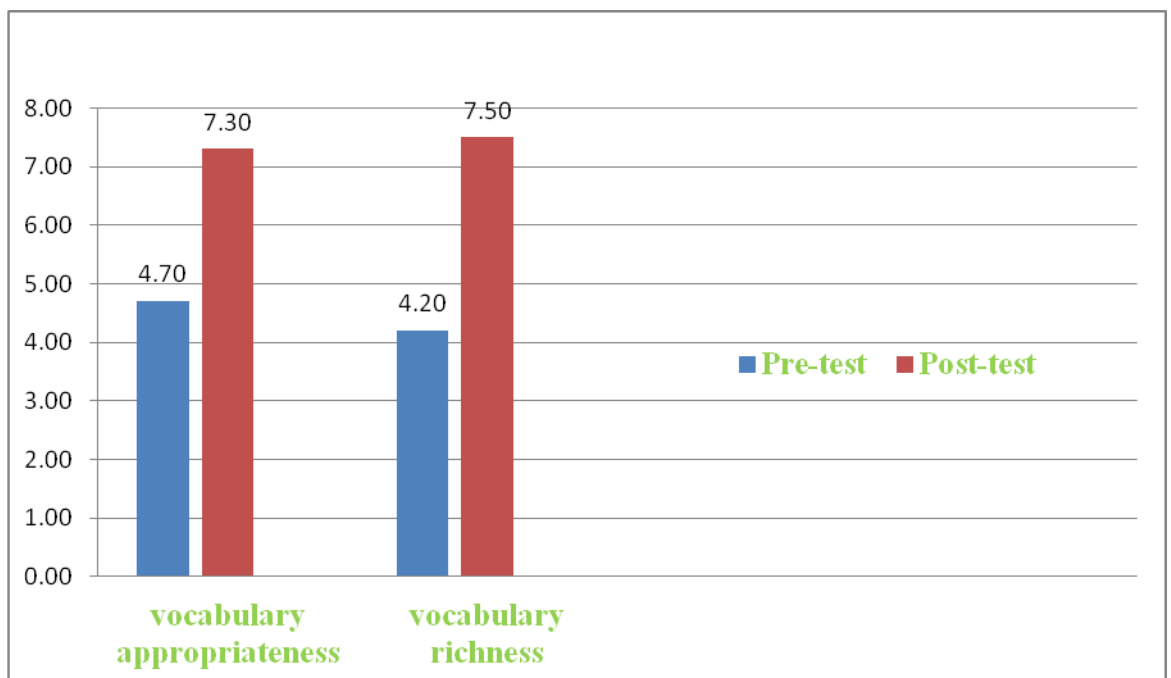
The table above represents the difference of scores in the pre-test and post-test. It shows the remarkable increase in learners' scores in both tasks after the treatment was given; despite of the stability of some learners' score which were considered to be the minority group. Therefore, it indicates that MMS was to some extent effective in improving vocabulary appropriateness and vocabulary richness of pupils, thus, achieving the goal of employing this strategy in teaching vocabulary.

**b. Improvement of learners' Vocabulary through Mind mapping technique.**

The improvement of learners' vocabulary at the second grade students Sanhadri middle school by using mind mapping technique in term of vocabulary appropriateness and vocabulary richness will be explained as follows:

To see clearly the improvement of students' vocabulary, the following chart is presented:

**Figure 3.5:** The improvement of students' vocabulary.



The figure above shows the improvement of the students score from pre test to post test. The scores were got after assessing the students' vocabulary after the

treatment was given. Mean score were significantly improve from **4.7** in pre test to **7.3** in post test in terms of vocabulary appropriateness and from **4.2** to **7.5** in terms of vocabulary richness. It was proven that the Mind mapping technique was effectively improving students' vocabulary mastery with the improvement **55.32%** in vocabulary appropriateness and **78.57%** in vocabulary richness. Hence, it confirms the validity of the previous suggested hypothesis.

### **3.4 Conclusion**

As a result of what has been mentioned above, we can conclude that using Mind mapping strategy (MMS) improves the students' vocabulary appropriateness and richness of 2MS students. It was also proven that the Mind mapping Strategy MMS was effectively improving students' vocabulary with **55.32%** in vocabulary appropriateness and **78.57%** in vocabulary richness. As a result, learner's classification moved from poor to good.

### **3.5 Implications of the study**

The present study proved that using Mind Mapping Strategy MMS is beneficial for vocabulary learning. The following pedagogical implications might be stated as follows:

1) The obtained results of this study show that there is an improvement in students' vocabulary learning. This indicates that teachers of middle school should adopt MMS as brainstorming strategy to improve vocabulary learning and use, hence facilitate the learning objectives of the lesson.

2) Mind Maps are flexible; it means they can be used for teaching any aspect of the language.

3) Mind Mapping Strategy MMS is a technique that provide opportunities for EFL learners to acquire and learn vocabulary in a funny way. Hence teachers have to deviate from the traditional methods that are used in teaching vocabulary.

4) Learners should be aware of MMS as a tool to enrich their vocabulary and use it inside and outside the class.

### **3.6 Limitations of the study**

The focus of this research has been limited to one training session due to:

- Time allotted for English subject with 2MS was two sessions a week ( 1 hour per session, 45 m during Ramadan). In addition to the long program (4 sequences ) which must be completed.

Thus, the results of the present study cannot be generalized.

### **General Conclusion:**

The study aims at highlighting the effectiveness of using Mind Mapping Strategy MMS in improving students' vocabulary. This study is divided into three Parts; the first one was for reviewing the literature covering all the aspects of vocabulary learning and teaching as well as strategies used to teach vocabulary. In addition, it covers the nature of MMS, the stages to make a Mind Map and the use of this strategy in EFL classroom. The second part presents the methodology used to fulfill this research. After analyzing the research findings and discussing the results in the third part, it has been proved that Mind Mapping Strategy MMS has a significant effect on EFL pupils' vocabulary appropriateness and richness. That is why; teachers should give more importance to the use of Mind Mapping Strategy MMS in the classroom; since it helped middle school pupils in improving their vocabulary from pre-test to post-test.

# Appendices

## Appendix A: Pre- and Post-test

**Task1 :** I fill the gap with the appropriate word:

**Volleyball - video games - watching - likes – listening - love**

- 1- I.....(a) playing football but my friend karim loves playing .....(b).
- 2- My mother prefers cooking and ..... (c) to music.
- 3- Asma enjoys swimming but her sister likes ..... (d) cartoon.
- 4- My friend Mohamed likes playing ..... (e) instead Ali ..... (f) Drawing.

**Task 2:** I read and I complete the list.

- a- Football – volleyball - ..... - ..... - .....
- b- Playing – swimming - ..... - ..... - .....
- c- Like – love - ..... - ..... - .....
- d- My mother – my broher - ..... - ..... - .....

## Appendix B: Evaluation of Pre- and Post-test

**Task1 :** I fill the gap with the appropriate word:

- 1- I love (1pts) playing football but my friend karim loves playing volleyball (1 pts).
- 2- My mother prefers cooking and listening (1 pts) to music.
- 3- Asma enjoys swimming but her sister likes watching (1 pts) cartoon.
- 4- My friend Mohamed is interested in playing videogames ( 1 pts) instead Ali likes (1 pts) drawing.

Task 2: I read and I complete the list.

- a- Football – volleyball - **handball** -**tennis** - **karate**
- b- Playing – swimming - **reading**- **watching** - **writing**
- c- Like – love – **interested in** – **fond of** – **keen on**
- d- My mother – my brother - **my sister** – **my father** – **my cousin**

|                    |                                                |                          |
|--------------------|------------------------------------------------|--------------------------|
| <b>Word list 1</b> | <b>Interests/hobbies/likes/sports</b>          | <b>( 1 pts per word)</b> |
| <b>Word list 2</b> | <b>Activities (gerund;verb+ing)</b>            | <b>( 1 pts per word)</b> |
| <b>Word list 3</b> | <b>Verbs (simple present expressing likes)</b> | <b>( 1 pts per word)</b> |
| <b>Word list 4</b> | <b>relatives</b>                               | <b>( 1 pts per word)</b> |

**Remark:** spelling mistakes weren't taken into consideration (where the focus was on enriching vocabulary)

## Appendix C: Lesson Plan

*“A Good Plan is Like A Road Map. It Shows The Final Destination and Usually The Best Way to Get There.” Donald Judo.*

|                                                                                                                                                                            |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Level : 2MS</b>                                                                                                                                                         |                   |
| <b>Sequence : O1</b>                                                                                                                                                       | <b>Sesson: 03</b> |
| <b>Lesson Focus : Language Learning</b>                                                                                                                                    |                   |
| <b>Learning Objective:</b> enable my learners to express likes, talk about their hobbies and interests using “ing” form after verbs: like, enjoy, prefer, love, interested |                   |

in, keen on , fond of.

**Target Competencies: interact – interpret – produce.** (Competencies are presented in an integrated way).

**Domain:** Oral – Written – Both.

**Target Structures:**

**Materials:** WB – worksheets – PPs’ books – flashcards

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Cross-curricular Competencies:</b></p> <p><b>a- Intellectual competency:</b></p> <p>The learner can show some degree of autonomy.</p> <p><b>b- Methodological Competency:</b></p> <p>He can listen and take down notes.</p> <p>He can assess himself and his peers.</p> <p><b>c- Communicative competency:</b></p> <p>He can reinvest the language in real-life situation.</p> <p><b>d- Personal and social competencies:</b></p> <p>He can socialise through oral and written exchanges.</p> | <p><b>Core-values:</b></p> <ol style="list-style-type: none"> <li>1- Being positive.</li> <li>2- Showing respect to others’ interests.</li> <li>3- Valuing leisure time activities( reading books)</li> <li>4- Being responsible for his own learning).</li> <li>5- Freedom of expression</li> <li>6- Behaving with self confidence.</li> </ol> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Time | Framework | Procedures                                                                                                                                                     | Objectives                                                  | Materials   | VA<br>KT |
|------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------|----------|
| 10m  | Pre-test  | Teacher greets her learners and welcomes them.<br>Teacher distributes tasks sheets and ask her learners to do Task1 and 2 ( pre-test) without any explanation. | Assessing learner’s vocabulary before the training session. | Work-sheets | V/<br>A  |

|     |                      |                                                                                                                                                                                                                                            |                                               |                       |               |
|-----|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|---------------|
| 5 m | <b>Warm-up</b>       | Teacher asks her learner: What do you like doing after school/ on weekends or in your free time/holidays?                                                                                                                                  | Interacting orally                            | White-board/pictures/ | A/<br>V       |
| 10m | <b>Presenta-tion</b> | Learners interact with different answers.<br>Teacher tries to elicit learners' words and ideas from their background knowledge then translate them on the white-board as a Mind Map.                                                       | Recalling previous words then adding new ones | WWS                   |               |
| 15m | <b>Practice</b>      | By motivating learners and monitoring the session the teacher design a Mind map using different colors, pictures, drawings<br>After giving much vocabulary teacher elicit the rule of expressing likes from her learners the write it down | Introducing MMS                               |                       | V/<br>A/<br>K |
|     |                      | To express likes, I use :<br>Sujct+like(S.Present)+Stem+ing (gerund)+ ..<br>We can use the following expres-sions:<br>Like, love, prefer, enjoy, interested in, fond of, keen on                                                           | Eliciting then giving the rule                | WWS                   |               |
|     |                      | Teacher asks her learners to interact orally using the rule and the Mind Map<br>Learners interact with different sen-tences using the Mind Map and their creativity.                                                                       | Checking how well the strategy works          |                       | V/<br>A       |
| 10m | <b>Use</b>           | Teacher distributes the Tasks sheet for                                                                                                                                                                                                    | Assessing learners'                           | Work-                 |               |

|  |  |                                                                                                                                                                                                                                                             |                                                                                                          |                                           |                                        |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|
|  |  | <p>the second time (Post-test) to assess their improvement after the training session.</p> <p>Teacher asks her learner to produce written sentences expressing their likes and interests.</p> <p>Learners write the maximum sentences they can produce.</p> | <p>improvement</p> <p>Free task to assess vocabulary richness and the impact of MMS on writing skill</p> | <p>sheets</p> <p>Learners' production</p> | <p>K</p> <p>V/<br/>A/<br/>K/<br/>T</p> |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|

**Appendix D: classification of learners' scores in vocabulary appropriateness**

| Learners   | Pre-test | Classification | Post-test | Classification |
|------------|----------|----------------|-----------|----------------|
| Learner 1  | 3.33     | very poor.     | 6.6       | acceptable     |
| Learner 2  | 3.33     | very poor.     | 6.6       | acceptable     |
| Learner 3  | 3.33     | very poor.     | 8.3       | good           |
| Learner 4  | 6.6      | acceptable     | 6.6       | acceptable     |
| Learner 5  | 3.33     | very poor.     | 5         | poor           |
| Learner 6  | 0        | very poor.     | 0         | very poor      |
| Learner 7  | 1.66     | very poor.     | 6.6       | acceptable     |
| Learner 8  | 5        | poor.          | 6.6       | acceptable     |
| Learner 9  | 10       | excellent      | 10        | excellent      |
| Learner 10 | 1.66     | very poor.     | 10        | excellent      |
| Learner 11 | 0        | very poor.     | 6.6       | acceptable     |



|                   |            |              |            |             |
|-------------------|------------|--------------|------------|-------------|
| <b>Learner 12</b> | 6.6        | acceptable   | 10         | excellent   |
| <b>Learner 13</b> | 3.33       | very poor.   | 10         | excellent   |
| <b>Learner 14</b> | 3.33       | very poor.   | 6.6        | acceptable  |
| <b>Learner 15</b> | 0          | very poor.   | 5          | poor        |
| <b>Learner 16</b> | 6.6        | acceptable   | 6.6        | acceptable  |
| <b>Learner 17</b> | 6.6        | acceptable   | 6.6        | acceptable  |
| <b>Learner 18</b> | 0          | very poor.   | 1.6        | very poor   |
| <b>Learner 19</b> | 10         | excellent    | 10         | excellent   |
| <b>Learner 20</b> | 10         | excellent    | 10         | excellent   |
| <b>Learner 21</b> | 0          | very poor.   | 0          | very poor   |
| <b>Learner 22</b> | 10         | excellent    | 10         | excellent   |
| <b>Learner 23</b> | 6.6        | acceptable   | 10         | excellent   |
| <b>Learner 24</b> | 10         | excellent    | 10         | excellent   |
| <b>Learner 25</b> | 6.6        | acceptable   | 6.6        | acceptable  |
| <b>Learner 26</b> | 6.6        | acceptable   | 10         | excellent   |
| <b>Learner 27</b> | 3.33       | very poor.   | 10         | excellent   |
| <b>Learner 28</b> | 5          | poor.        | 10         | excellent   |
| <b>Mean</b>       | <b>4.7</b> | <b>poor.</b> | <b>7.3</b> | <b>good</b> |

#### **Appendix E: Classification of learners' scores in vocabulary richness**

| <b>Learners</b>  | <b>Pre-test</b> | <b>Classification</b> | <b>Post-test</b> | <b>Classification</b> |
|------------------|-----------------|-----------------------|------------------|-----------------------|
| <b>Learner 1</b> | 1.6             | very poor.            | 5                | poor                  |
| <b>Learner 2</b> | 1.6             | very poor.            | 5                | poor                  |
| <b>Learner 3</b> | 4.1             | poor.                 | 10               | excellent             |
| <b>Learner 4</b> | 5.8             | acceptable            | 10               | excellent             |

|                   |            |              |            |             |
|-------------------|------------|--------------|------------|-------------|
| <b>Learner 5</b>  | 3.3        | very poor.   | 7.5        | good        |
| <b>Learner 6</b>  | 0          | very poor.   | 0.8        | very poor   |
| <b>Learner 7</b>  | 5          | poor.        | 6.6        | acceptable  |
| <b>Learner 8</b>  | 6.6        | acceptable   | 9.1        | excellent   |
| <b>Learner 9</b>  | 5          | poor.        | 10         | excellent   |
| <b>Learner 10</b> | 4.1        | poor.        | 9.1        | excellent   |
| <b>Learner 11</b> | 0          | very poor.   | 2.5        | very poor   |
| <b>Learner 12</b> | 4.1        | poor.        | 10         | excellent   |
| <b>Learner 13</b> | 1.6        | very poor.   | 7.5        | good        |
| <b>Learner 14</b> | 2.5        | very poor.   | 6.6        | acceptable  |
| <b>Learner 15</b> | 1.6        | very poor.   | 3.3        | very poor   |
| <b>Learner 16</b> | 5.8        | acceptable   | 10         | excellent   |
| <b>Learner 17</b> | 3.3        | very poor.   | 7.5        | good        |
| <b>Learner 18</b> | 4.1        | poor.        | 5.8        | acceptable  |
| <b>Learner 19</b> | 7.5        | good         | 10         | excellent   |
| <b>Learner 20</b> | 6.6        | acceptable   | 8.3        | good        |
| <b>Learner 21</b> | 2.5        | very poor.   | 5          | poor        |
| <b>Learner 22</b> | 7.5        | good         | 10         | excellent   |
| <b>Learner 23</b> | 7.5        | good         | 10         | excellent   |
| <b>Learner 24</b> | 5          | poor.        | 9.1        | excellent   |
| <b>Learner 25</b> | 5          | poor.        | 5.8        | acceptable  |
| <b>Learner 26</b> | 5          | poor.        | 5.8        | acceptable  |
| <b>Learner 27</b> | 4.1        | poor.        | 9.1        | excellent   |
| <b>Learner 28</b> | 6.6        | acceptable   | 10         | excellent   |
| <b>Mean</b>       | <b>4.2</b> | <b>poor.</b> | <b>7.5</b> | <b>good</b> |

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## ملخص

يعتبر تعلم المفردات جانباً مهماً من تعلم اللغة وأكبر التحديات التي يواجهها الطلاب في دراستهم. ويعد نقص المفردات لدى الطلاب هو العقبة الرئيسية التي تمنعهم من التواصل والكتابة بشكل فعال. يسعى هذا البحث إلى استكشاف إلى أي مدى يمكن أن تحسن استراتيجيات رسم الخرائط الذهنية مفردات التلاميذ. أجريت الدراسة على مستوى تلاميذ السنة الثانية بمتوسطة عبد الحفيظ سنحصري سيدي خويلد ورقلة. اشتملت الدراسة على شبه تجربة, اختبار قبلي واختبار بعدي. كشفت النتائج عن تحسن ملحوظ في ملاءمة مفردات التلاميذ وكذا الثراء اللغوي. توصي الدراسة بدمج هذه التقنية في استراتيجيات تدريس المفردات في التعليم المتوسط.

**الكلمات المفتاحية :** تعلم المفردات, متعلمي اللغة الأجنبية كلغة أجنبية, رسم الخرائط الذهنية

## Résumé

L'apprentissage du vocabulaire est un aspect important de l'apprentissage des langues et le plus grand défi auquel les étudiants sont confrontés dans leurs études. Le manque de vocabulaire des élèves est le principal obstacle qui les empêche de communiquer et d'écrire efficacement. Cette recherche vise à explorer dans quelle mesure la stratégie de cartographie mentale peut améliorer le vocabulaire des élèves. L'étude a été menée au niveau des élèves de deuxième année du collège Abdelhafid Sanhadri-Sidi-Khouiled-Ouargla. L'étude comprenait une semi-expérience, un pré-test et un post-test. Les résultats ont révélé une amélioration significative de l'adéquation du vocabulaire et de la richesse linguistique des élèves. L'étude recommande d'intégrer cette technique dans les stratégies d'enseignement du vocabulaire dans l'enseignement moyen.

**Mots-clés :** apprentissage du vocabulaire, apprenants de langues étrangères en tant que langue étrangère, cartographie Conceptuelle

