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**Investigating the Impact of the Method of Loci on Vocabulary
Memorization and Recall Skill(s): The Case of Third-Grade Pupils at
Saad Chikouche Primary School - M'sila.**

*Dissertation Submitted to the Department of English in Partial Fulfillment of the
Requirements for master's degree in Linguistics*

Candidate:

Miss. Yaqout DAOUD

Miss. Chiraz LAKEHAL

Supervised by:

Pr. Assia BAGHDADI

Board of Examiners

Ms. Messaouda LAADJINI

Examiner

Dr. Fadhila ABADOU

Chair person

Pr. Assia BAGHDADI

Supervisor

2022/2023

Declaration

We hereby declare that the dissertation entitled, “Investigating the impact of the method of Loci on vocabulary memorization and recall skill(s): The case of third- grade pupils at Saad Chikouche primary school- M’sila” is our own work and that all the sources we have quoted have been acknowledged by means of references.

Dedication I

I dedicate this work to my beloved and supportive parents, who always believed in me and saw light in me even when my frail spirit was withered. Your unwavering faith and encouragement have been a guiding force in my life.

To my brother and sister who provided me with their endless support and encouragement .thank you for your love, guidance, and belief in me.

To my childhood best friend, Manal, thank you for the memories we've shared and for always being there for me, no matter the distance.

To my best friend and project partner, Chiraz, thank you for your collaboration, dedication, and friendship. Our joint efforts have made this project a success.

This dedication is a reflection of the love, support, and friendship that have surrounded me on this journey. I am truly thankful for every one of you.

Yaqout Daoud

Dedication II

This work is dedicated to my loving parents for their unconditional care and support. To my family, my best friends and finally, to my diligent and charming partner daoudyaqout for her great efforts put in this dissertation.

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Abstract

Memory plays a crucial role in the learning process, particularly in vocabulary acquisition. This study focuses on investigating the effectiveness of the Method of Loci as a mnemonic technique for improving vocabulary memorization and recall in 3rd-grade primary school learners. Drawing upon empirical research, a mixed-methods approach was employed. A questionnaire was administered to ten primary school teachers to gather insights into current practices and perceptions regarding vocabulary instruction. Additionally, a test and pre-test were conducted with 18 students in each 3rd-grade class, measuring their vocabulary memorization and recall abilities before and after implementing the Loci Method. The main objective of this dissertation is to evaluate the impact of the Loci Method on vocabulary learning outcomes in 3rd-grade pupils. By examining the effectiveness of this mnemonic technique, practical implications for enhancing vocabulary instruction in primary schools can be identified. The results revealed significant improvements in both vocabulary memorization and recall. Implementing the method of Loci lead to a substantial enhancement in learners' ability to memorize vocabulary words, as evidenced by a notable increase in post-test scores compared to pre-test scores irrespective of pupils' initial proficiency levels, suggesting that the MOL technique was effective for diverse learners. These findings hold practical implications for educators, highlighting the benefits of incorporating mnemonic techniques, specifically the method of Loci into vocabulary instruction for young learners.

Keywords: 3rd-Grade Primary School, Diverse Learners, Learning Enhancement, Mnemonic Techniques, Method of Loci, Vocabulary Instruction, Vocabulary Memorization, Vocabulary Recall.

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List of Acronyms

COG	Cognitive Strategies
DET	Determination Strategies
MEM	Memory Strategies
MET	Meta-Cognitive Strategies
MOL	Method of Loci
SOC	Social Strategies
VLS	Vocabulary Learning Strategies

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General Introduction

1. Background of the Study

Vocabulary acquisition is an essential aspect of language learning and plays a crucial role in developing learners' communicative competence (Krashen, 1981, p. 12). However, many students struggle with learning and retaining new vocabulary words, hindering their language learning progress. To enhance vocabulary acquisition, teachers and researchers are exploring new methods and techniques. Nattinger (1988) suggests that mnemonic techniques are the most effective means of learning and recalling new vocabulary words in EFL and ESL contexts.

. Ruggiero and Tweney (2000) explored the use of the method of Loci in enhancing memory for scientific concepts. The study found that the method of Loci was effective in improving learners' ability to recall scientific concepts and that the technique was particularly useful for learners who struggled with abstract concepts. A study by Maguire, Valentine, Wilding, and Kapur (2003), the researchers used (FMRI) to examine the neural mechanisms .the method of loci was associated with increased activity in the hippocampus and other brain regions that are involved in memory encoding and retrieval. They also found that the activity in these brain regions was related to the participants' ability to recall the location of objects in the virtual environment.

Cognitive studies and empirical research in cognitive psychology have shown that the way knowledge is structured in memory determines the ability to retain, recall, and use it to solve problems (Chi & VanLehn, 2012). Therefore, researchers have begun to explore new strategies that take into account the mental requirements of learners when memorizing new vocabulary items. However, there is still limited research on the use of mnemonic techniques in educational settings, particularly for early-age learners (D'Angelo & Guarnera, 2018)

Most of the existing research on the method of loci has been conducted with older learners, such as university students or adult learners. Smith (2020) emphasizes that "elementary school students have unique cognitive and developmental needs, and thus, it is important to investigate the effectiveness of different vocabulary learning strategies for this group of learners." thus, the results from previous studies may not be directly applicable to them. Therefore, this study is highly motivated by such a gap and aims to investigate and explore the influence of the Loci method on learners' vocabulary recall skills inside primary classrooms.

2. Statement of the Problem

Teaching vocabulary to elementary EFL learners can be one of the most challenging tasks for English teachers, particularly due to the extensive number of unfamiliar words encountered by these learners. Traditional teaching methods have proven to be ineffective in addressing this issue. Danesi (2003) points out that traditional language teaching methods activate only 4% of a learner's brain. Thus, a deeper level of processing should be applied to ensure adequate retention of new words. To address this issue, new vocabulary should be presented and taught in a way that students can easily learn and remember. Nattinger (1988) recommends using mnemonic techniques, such as the method of loci, to help learners remember new vocabulary in EFL and ESL contexts. The method of loci involves using visual cues to associate new words with familiar locations, making them easier to remember. Recent cognitive studies and empirical research in the field of cognitive psychology have demonstrated that the way knowledge is structured in memory determines the ability to retain, recall, and use it to solve problems. Researchers have taken these findings into account when examining new teaching strategies and have identified ways in which language teachers can help students keep new lexical items in their long-term memory. However, despite the potential efficacy of mnemonic techniques in enhancing vocabulary acquisition, there is a lack

of research focusing on memory strategies specifically tailored for early – age learners. Moreover, the MOL technique, with its ability to tap into visuospatial brain regions, holds promise as a valuable tool for vocabulary memorization and recall skills development. Consequently, this study seeks to address these research gaps by investigating the effectiveness of the method of Loci as a teaching technique for enhancing memory capacity and vocabulary mastery in third-grade at SaadChikouche primary school.

3. Aims of the Study

Some specific aims have been established to guide this research. These aims are as follow:

- ❖ Investigate the effectiveness of implementing the Method of Loci, a mnemonic technique, in facilitating vocabulary memorization and recall proficiency among 3rd-grade primary school students.
- ❖ Examine and evaluate the impact of mnemonic techniques, with a specific focus on the Method of Loci, on the enhancement of vocabulary learning outcomes within the unique educational context of 3rd-grade primary schools.
- ❖ Explore the pedagogical implications and potential advantages of integrating the Loci Method into the existing vocabulary instruction framework in primary school settings, with an emphasis on its potential to promote more efficient vocabulary acquisition and retention.

4. Research Questions

The current study is an attempt to answer the following research questions:

- Does the use of the method of loci improve elementary students' memory and recall of vocabulary words compared to traditional vocabulary learning methods?

- What are the perceptions of elementary students and teachers regarding the use of the method of loci for vocabulary learning?
- To what extent do individual differences, such as learning styles and prior vocabulary knowledge, impact the effectiveness of the method of loci for elementary students?

5. Research Hypotheses

Based on the above research Questions it is hypothesized that:

- **Null hypothesis:** Elementary students who use the method of loci will have less vocabulary mastery compared to those who use traditional vocabulary learning methods.
- **Alternative hypothesis:** Elementary students who use the method of loci will have better vocabulary mastery compared to those who use traditional vocabulary learning methods.

6. Significance of the Study

The findings of this study will be of great benefit to both primary school teachers and students. First, the result of this research may raise teacher awareness of the significance of implementing memory strategies “the method of loci” as a memory-enhancing technique in 3rd-grade primary programs and its role in promoting learners’ lexical recall performance. The view of this research is to encourage the consideration of future practice and research applications to use MOL techniques as a memory contribution and cognitive means to teach vocabulary in 3rd-grade programs because it will help to a great extent in expanding their memory capacity and developing their lexical acquaintance. This study goes with previous studies that have examined the efficacy of the loci method for older adults in promoting the process of reflecting information and go further to unlock a new aspect of incorporating a new

teaching method inside the cognitive structure of primary EFL new learners to build a successful vocabulary learning set and narrowing down the gap existing in vocabulary teaching techniques. This study is interesting since it contributes to creating a productive teaching vocabulary and communicative instruction.

7. Research Methodology

7.1 Research Method

This study makes use of mixed methods, both descriptive and experimental, because they seem the most appropriate methods to analyze the effectiveness of using the method of loci in teaching vocabulary at a 3rd-grade primary school and to approach this topic. We opted for the experimental design as it is the best way to determine the effect of MOL on pupils' vocabulary improvement. Moreover, the descriptive method enables the use of a questionnaire submitted to the teachers of primary schools to investigate the effectiveness of using such a technique compared to the previous root method that has been used to teach vocabulary, besides the difficulties that learners faced while accomplishing such assignments. In addition, both ways increase the validity and reliability of the study.

7.2 Sample of the Study

Our sample consists of 18 students in each 3rd-grade class at Saad Chikouch primary school. This sample is randomly selected. These two groups were divided into an experimental group and a control group. In addition, we have opted for 10 primary English teachers from different schools around M'sila to answer the questionnaire.

7.3 Data Gathering Tools

Two research instruments were employed to meet the objectives delineated earlier: a teacher's questionnaire and pre-test and post-test assessments. The teacher's questionnaire was designed to elicit valuable insights from English language module instructors in primary

schools within the region of M'sila. It aimed to gather information regarding prevailing rote vocabulary learning techniques employed, challenges encountered by pupils in vocabulary acquisition, and the utilization of the Method of Loci as a cognitive research-backed solution to address the issue of suboptimal lexis recall.

Conversely, the pre-test and post-test assessments were administered to examine the validity of our formulated hypothesis. These assessments served as reliable measurement tools to gauge the efficacy of the implemented intervention. By comparing the students' performance before and after the intervention, the pre-test and post-test aimed to provide empirical evidence concerning the impact of employing the Loci Method on enhancing vocabulary memorization and recall abilities.

8. Organization of the Dissertation

This dissertation is divided into three chapters. The first chapter will give systemic definitions and significance for the main concepts. It will devote sections to both vocabulary learning (definition, types, importance as a significant component in language and communication, vocabulary teaching techniques) and memorization (memory-improving strategies for vocabulary acquisition and retention). The second chapter will examine the MOL technique (an overview of the loci method, its stages, and how it can be used to learn new languages). It also discusses the significance of the loci method in teaching and the mind palace theory that supports it. The last point deals with cognitive psychology and empirical research perspectives on the Mol method and the relationship between cognitive structure and vocabulary acquisition. The final chapter will deal with the methodology, data analysis, and pedagogical implications that have been used in this research and will give a general description of data analysis. This section represents the research design, the method, settings, participants, data collection tools, and the discussion of the findings.

Chapter One

The Power of Words: Understanding Vocabulary Acquisition and Memory Techniques

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Introduction

Vocabulary is the solid base of any language that combines any ideas, thoughts or stories. Human's capacity to perceive and convey ideas depends on their comprehension and use of words. They can communicate easily with an average knowledge of vocabulary regardless of grammar, whether they are speaking, reading, or writing. Yet, building and maintaining a strong vocabulary to primary pupils is not an easy task; many language teachers have trouble with teaching this aspect in 3rd grade. Most teachers focus on Vocabulary as it is the first step of language learning to build up a solid base. Thankfully, research has demonstrated that there are efficient methods and approaches for learning and remembering new words. Therefore, the reviewed literature is divided into two chapters; the first chapter, which is about vocabulary learning and the mechanism of memory, will examine: a summary of vocabulary and memory strategies. It will also investigate the many kinds of vocabulary, its significance in language learning, vocabulary teaching methods, and memory-improving strategies for vocabulary acquisition and retention.

1.1 Overview of Vocabulary

Despite decades of research on first and second language acquisition, the mechanism of vocabulary learning is still somehow mysterious; one area of consensus among researchers is; however, the fact that words are not acquired in spontaneously; rather, they are gradually learned over time and after numerous exposures to the word in a variety of contexts (Schmitt, 2000).

Vocabulary is a broad term that has been defined differently among scholars. It links the four skills of language all together, so its definition is related to different views about its use and nature. To start with, Harmer (1991) claims that "if language

structures make up the skeleton of a language, the vocabulary provides the flesh and the vital organs” (p.153). In other words, as the language has a structure; which includes the systematic rules of an organization such as grammatical rules; it has also the words on which we apply those rules.

The adequate application of grammatical rules is useful, yet the ignorance of words needed to convey what is meant to be conveyed is the problem. According to Wilkins (1972) “without vocabulary nothing can be conveyed” (p.227). For example, a stranger with native speakers who are drinking water, and he/she is thirsty and wants to drink, so just saying “water” conveys the wanted meaning. According to Scrivener (2005), vocabulary primarily encompasses individual words (such as "dog," "green," and "wash"), and occasionally includes closely associated two- or three-word combinations (such as "go off" or "stock market").

To explain, according to the definition vocabulary refers to words; the words of a language are vocabulary. According to Dimand and Gutlohn (2006) “vocabulary is the knowledge of words and words meaning “; based on this definition, vocabulary is knowing not only the words but also their meanings (e.g. the word “mirror” means (the object that one uses to see his/her reflection on). Knowing the word with its meaning facilitates language comprehension and improves production abilities.

According to Hubbard (1983), vocabulary can be described as a potent conveyer of meaning. On the other hand, Diamond and Gutlohn (2006) emphasize that vocabulary encompasses the knowledge of words and their meanings. Consequently, establishing a robust vocabulary foundation is crucial for achieving the desired level of language proficiency.

Hence, it is essential for students to not only recognize words but also understand their meanings. Consequently, when a student is able to comprehend the meaning of a word in various contexts, including spoken and written forms, and demonstrate adequate pronunciation, they possess the requisite knowledge and understanding of that word. Furthermore, Neuman and Dwyer (2009) define vocabulary as “words we must know to communicate effectively, words in speaking (expressive vocabulary) and words in listening (receptive vocabulary)” (p.385). In other words, vocabulary is not only words that one knows, but also it is words that one uses to communicate effectively. When one has enough vocabulary storage with its meaning, he/she would be an effective communicator.

Definition of vocabulary is not related to scholars only, yet it was also defined in dictionaries. To illustrate, Oxford Dictionary defines vocabulary as the body of words used in a particular sphere, and has the total number of words that make up a language. In other words, a language consists of a total number of words (vocabulary is the building of a language). Vocabulary is the whole words of language that covers all fields and domains, which means that every single domain has its specific vocabulary or words (terminology).

1.2 Types of Vocabulary

1.2.1 Oral and Printed Vocabulary

Heibert and Kamilie (2005) state that “oral vocabulary is the set of words which we know the meanings when we speak or read orally, and that printed vocabulary consists of those words for which the meaning is known when we write or read silently” (p.03). Thus, words understood while listening and used while speaking

represent the oral vocabulary, and words acknowledged while writing or reading silently are printed vocabulary.

1.2.2 Receptive and Productive Vocabulary

This distinction of vocabulary is related to the four skills of language. Receptive vocabulary can be defined as the words that any one understands when reading or listening. In the same vein, Hanson and Pauda (2011) claim “Receptive vocabulary refers to the words we understand through reading and listening” (p.05). Productive vocabulary refers to the comprehensive count of words an individual utilizes during oral and written communication. Furthermore, Heibert and Kamilie (2005) suggest “Productive vocabulary is the set of words that an individual can use when writing or speaking (p.05)

1.2.3 Types of Vocabulary in Terms of Use and Redundancy in Writing

Four kinds of vocabulary were distinguished by Nation (2000) in written texts: a) highfrequency words, b) academic words, c) technical words, and d) low frequency words (p.45). Therefore, high frequency words are words shared and known by individuals; they use those words in them daily life conversations. Then, academic words refer to words used only in academic texts than any other context. Besides, technical words are words of specific domain like the vocabulary used in the field of economy. Finally, low frequency words are words rarely used by individuals.

1.2.4 Types of Vocabulary in terms of Breadth and Depth

The size of vocabulary or the quantity of words that one knows is called the breadth of vocabulary. The number of words that one has in mind is the breadth, and knowing the meaning of those words and using them correctly and appropriately in

context is the depth of vocabulary. To explain, depth refers to the quality of vocabulary as Corrigan (2008) claims “Breadth involves how many words are known, and depth involves how much is known about each word” (p.110).

1.3 Importance of Vocabulary

The understanding of word meanings and the efficient retrieval of that knowledge are considered paramount factors in the realms of reading and listening comprehension, as well as in speaking and writing fluency. Consequently, vocabulary knowledge greatly aids students in comprehending language. Scholars such as Widdowson (1989) and McKeown (2002) contend that vocabulary knowledge forms the crux of language comprehension and usage.

Furthermore, Barra (1995) suggests that to achieve successful text comprehension, students must possess a sufficient level of word knowledge. In other words, the comprehension of a language hinges on the quantity of known words within that particular language. Moreover, when students lack adequate word knowledge during the reading and comprehension process, they encounter difficulties and are only able to understand a writer's message if they are familiar with the meanings of most of the words used in the given text.

According to Nation (2001), readers should be acquainted with at least 97% of a text's vocabulary to adequately comprehend it. Without knowledge of key vocabulary in a text, learners may struggle to understand the intended message. Therefore, word knowledge is crucial to reading comprehension, as it determines the extent to which students can comprehend the texts they read. Consequently, it is essential for students to possess an extensive vocabulary in order to facilitate any form of language comprehension. Furthermore, vocabulary assists students in language production with greater efficacy.

Hubbard (1983) asserts that the more words a student knows, the more precisely they can express their intended meaning. In this regard, effective communication necessitates a broad knowledge of word meanings. Similarly, Cardenas (2001) posits that vocabulary usage serves as a gauge of a student's proficiency in oral contexts. Thus, vocabulary assumes an indispensable role in determining a student's ability to communicate successfully.

In summary, the acquisition and utilization of vocabulary play a pivotal role in various aspects of language proficiency. Understanding word meanings and efficiently employing vocabulary significantly contribute to reading and listening comprehension, as well as to speaking and writing fluency. A substantial vocabulary repertoire is vital for comprehending and effectively conveying messages, and it serves as an indicator of language proficiency in oral communication.

Vocabulary is the key factor of learning a language. Every language skill is tightly related to vocabulary knowledge that one has in mind. Wilkins (1972) argues that “without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (p.112). Having enough vocabulary storage enhances the comprehension of learners and improves their productive abilities. Learners would be able to understand the language when listening or reading, and they would be able to produce when speaking and writing.

According to Bishop, Yopp and Yopp (2009, p.15), “students’ knowledge of words impacts their achievement in all areas of the curriculum because words are necessary for communicating the content”. The achievement of learners is related to their vocabulary knowledge. If they know the maximum number of words with their correct forms and their appropriate use, they would be effective and successful communicators.

1.4 Vocabulary Teaching Strategies

In accordance with Nation's (2001) perspective, the utilization of vocabulary learning strategies empowers learners to assume greater responsibility for their own learning process. He posits that the implementation of vocabulary learning strategies can facilitate the acquisition of a substantial amount of vocabulary. Brown and Payne (1994) propose that all vocabulary learning strategies are more or less linked to the following five steps involved in learning vocabulary in a foreign language:

- **Accessing Sources of New Words:** This step involves seeking out materials or contexts that expose learners to unfamiliar words.
- **Creating Clear Mental Representations:** Learners aim to form distinct mental images, either visual or auditory, of the forms or sounds of the newly encountered words.
- **Acquiring Word Meanings:** Learners focus on understanding the meanings of the words through various means, such as dictionary use or contextual analysis.
- **Establishing Strong Memory Connections:** This step involves forging robust connections between the word forms and their respective meanings in order to enhance memory retention.
- **Employing the Learned Words:** Learners apply the acquired vocabulary in meaningful contexts and actively use the words in their own language production.

Furthermore, drawing upon Schmitt's (1997) Vocabulary Learning Strategies (VLS) taxonomy, the "Discover Strategies" category refers to situations where learners come across new words and employ their language knowledge, reference materials, or seek assistance from others to determine their meanings. In contrast,

"Consolidation Strategies" pertain to learners' efforts to commit the target words to memory after their initial discovery.

By employing these vocabulary learning strategies, learners can take charge of their own vocabulary acquisition process, enhance their word knowledge, and improve their overall language proficiency.

The sub-categories of these two main themes are presented in Figure 1.1

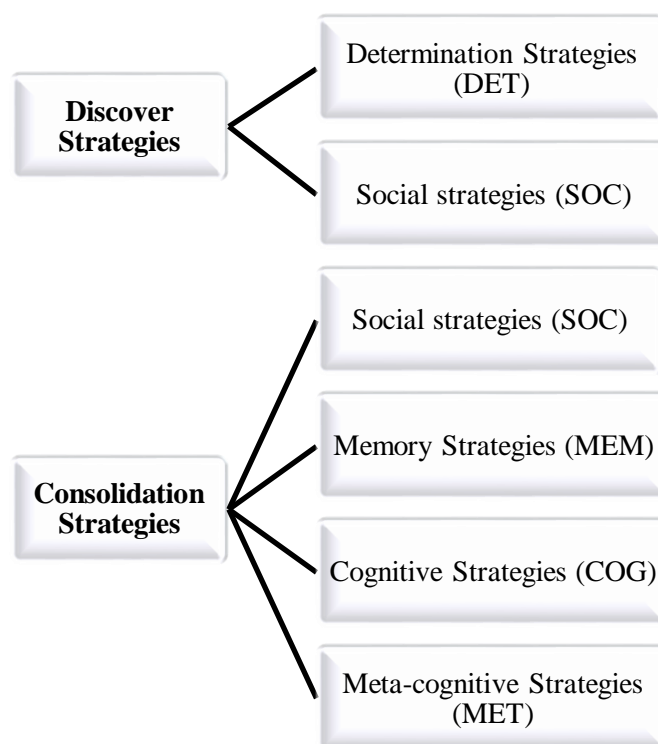


Figure 1: Sub-Categories of VLSs

1.4.1 Discover Strategies

1.4.1.1 Determination Strategies

Determination Strategies (DET), as described by Schmitt (1997), refer to the cognitive approaches employed by learners to ascertain the meaning of a word autonomously, without relying on external assistance. These strategies encompass a range of techniques, including the analysis of word class, deconstruction of word

components, recognition of cognates, inference from contextual cues, and utilization of dictionaries.

1.4.1.2 Social Strategies

Social strategies, referred to as SOC strategies, involve employing interpersonal methods to acquire understanding of a target word. These techniques encompass seeking assistance from teachers or friends for L1 translation, synonyms, paraphrased definitions, and guidance on how to utilize the newly acquired word in a sentence (Schmitt, 1997).

1.4.2 Consolidation Strategies

1.4.2.1 Social Strategies

Social strategies refer to the active participation of learners in group activities, seeking guidance from teachers to verify their word lists or word cards, and engaging in communication with native speakers to enhance their acquisition of vocabulary (Schmitt, 1997).

1.4.2.2 Memory Strategies

Memory strategies, often referred to as mnemonics, involve establishing connections between newly encountered words and existing knowledge by utilizing imagery or grouping techniques. These approaches facilitate better retrieval of the words, and physical actions can also be employed to aid in word recall (Schmitt, 1997). Schmitt (2000) observed that memory strategies typically involve cognitive processes that contribute to the long-term retention of vocabulary. Mnemonics can be utilized as effective tools to enhance the retrieval of words.

1.4.2.3 Cognitive Strategies

Schmitt (1997) highlights that the cognitive strategies category shares similarities with the memory group in terms of their nature, although the focus is not primarily on manipulative mental processing. According to Schmitt, word lists and word cards can aid in the initial encounter with a word, but their usefulness extends beyond that. Learners can also utilize these strategies to listen to words through their own tape recordings.

In the realm of cognitive strategies, learners can also acquire target words by associating them with labels attached to physical objects. Hedge (2000) defines cognitive strategies as "thought processes employed directly in learning, enabling learners to engage with the information presented in tasks and materials through various approaches" (p. 77). These approaches may involve repetition, note-taking, and inferencing.

1.4.2.4 Meta-cognitive Strategies

In the academic and formal context, meta-cognitive strategies (MET) encompass a range of cognitive processes that involve planning, reflecting on learning, self-monitoring, and self-evaluation. According to Hedge (2000), these strategies manifest when learners engage in activities such as previewing upcoming chapters, reviewing teacher feedback on written assignments, or revisiting notes taken during lessons. The utilization of meta-cognitive strategies enables learners to effectively manage and assess their own learning process, as highlighted by Schmitt (2000). Additionally, learners can evaluate their progress by undertaking vocabulary tests, allowing them to identify areas for improvement and make informed decisions

regarding the importance of certain words, especially those with low frequency that they expect to encounter infrequently.

Conversely, Rubin (1975) posited the existence of three distinct types of strategies employed by learners that have a direct or indirect impact on language learning. These strategies fall under the category of learning strategies and encompass two primary types. The first category encompasses cognitive and meta-cognitive learning strategies, which are considered to be directly involved in the development of the learner's language system.

Thus, Cognitive Learning Strategies (CLS) pertain to the specific steps or processes employed in learning or problem-solving tasks that involve direct analysis, transformation, or synthesis of learning materials. Rubin (1975) identified six key CLS that directly contribute to language learning: Clarification/Verification, Guessing/Inductive Inferencing, Deductive Reasoning, Practice, Memorization, and Monitoring.

Furthermore, Meta-cognitive Learning Strategies (MLS) are utilized to oversee and regulate language learning. These strategies encompass various processes, such as planning, prioritizing, goal-setting, and self-management. They form the second category and are not as directly associated with language learning. Rather, they focus on facilitating effective communication and the clarification of intended messages during conversations, particularly in response to misunderstandings or the need for clarification when interacting with others.

The final category, known as Social Strategies, comes into play when learners engage in tasks that provide them with opportunities to encounter and apply their knowledge. While these strategies expose learners to the target language, their contribution is considered indirect in terms of the acquisition, retention, retrieval, and utilization of language (Rubin and Wenden, 1987, p. 23-27).

1.5 Vocabulary and Long Term Memory

The preservation of knowledge over a longer period of time, spanning from days to years, is referred to as long-term memory. It is an essential component of human memory and is important for learning, problem-solving, and decision-making, among other cognitive functions (Atkinson and Shiffrin's, 1968).

According to Atkinson and Shiffrin's (1968) modal model of memory, long-term memory is one of the three stages of memory, along with sensory memory and short-term memory. Encoding is the process through which significant information is moved from short-term memory to long-term memory. After being encoded, the data is kept in long-term memory for recall in the future.

Explicit memory and implicit memory are two more divisions of long-term memory. The term "explicit memory" describes the conscious recall of information, such as remembering a name or phone number. The ability to ride a bike or write on a keyboard without consciously thinking about it is an example of implicit memory, in contrast to conscious memory, which refers to the recall of knowledge. Both explicit and implicit memories play diverse roles in cognitive processing and are essential for day-to-day functioning (Atkinson and Shiffrin's, 1968).

In general, long-term memory is an important component of human memory and is fundamental to our daily activities. In order to learn, solve problems, and make decisions, we need to be able to store and access a lot of information.

AzadehNemat's (2009) conducted a study to determine how well memory vocabulary learning techniques affected long-term retention. 40 intermediate EFL learners participated in the study and were split into two groups: the experimental group, which received instruction on memory vocabulary learning strategies, and the

control group, which received no instruction. According to the study, the experimental group outperformed the control group in terms of vocabulary long-term retention.

The study also discovered a positive correlation between long-term retention and the application of memory vocabulary learning techniques. The study came to the conclusion that memory vocabulary acquisition techniques are efficient in boosting long-term vocabulary retention and ought to be included in language learning courses.

1.6 Vocabulary and Short Term Memory

Working memory, usually referred to as short-term memory, is a type of memory that entails the manipulation and temporary storing of information. The memory system is in charge of temporarily storing information in the brain, typically for a few seconds to a minute. According to Atkinson and Shiffrin's (1968) modal model of memory, short-term memory is one of the three stages of memory, along with sensory memory and long-term memory. In a process called as attention, essential information is moved from sensory memory to short-term memory.

The capacity of short-term memory is constrained; it can only store a minimal amount of information at any given time. Depending on the intricacy of the information being stored, the capacity of short-term memory has been calculated to be somewhere between 7 and 2 items. Nevertheless, short-term memory is only capable of retaining a finite amount of information before it must be transferred to long-term memory or practised (Atkinson and Shiffrin's, 1968).

All in all, short-term memory is an important component of human memory and is essential to day-to-day functioning. It enables us to retain information, manipulate it, and apply it to challenging cognitive tasks.

In 2017, Kaushanskaya, Blumenfeld, and Marian conducted a study to look at how vocabulary knowledge and short-term memory tests differ between monolingual

and bilingual speakers. 110 participants took part in the study and performed a series of short-term memory and vocabulary tests, including English speakers who were monolingual, Spanish-English bilinguals, and Russian-English bilinguals.

The study's findings demonstrated a substantial positive link between vocabulary knowledge and tests of short-term memory in speakers who were either monolingual or bilingual. In contrast to monolinguals, the relationship was stronger in bilinguals. The largest correlation was discovered in Russian-English bilinguals; however, there were notable variances across different types of bilingual speakers in the link between vocabulary and short-term memory tests.

The study has significant implications for comprehending the relationship between vocabulary knowledge and short-term memory tests in bilingual speakers, and it raises the possibility that bilingualism may have cognitive benefits. The study also emphasises how crucial it is to take individual differences into account when examining how language and cognition interact.

1.7 Memory Enhancing Techniques

According to University of St. Augustine for Health Sciences (2019), there are various memory techniques that can help people get better at remembering things.

The following are some techniques that help improve memory:

- Getting adequate sleep so that memories can be reinforced.
- Maintaining an active lifestyle to improve brain function.
- Repetition and rehearsal strategies can be used to aid in memory
- Enhancing memory retention, take part in worthwhile learning activities.
- Making difficult knowledge simpler to recall, break it up into smaller chunks.
- Making information more remembered by using visualisation approaches.

- Making use of mnemonic methods to help recall lists or a series of facts.
- Controlling your stress levels, as prolonged stress might damage memory.
- Continuing to be socially active to preserve cognitive function.
- Engaging in novel and diverse mental exercises to stimulate cognitive function.

These memory techniques can be used at all ages, including childhood, adolescence, and later adults.

Moreover, according to Cherry (2021), there are several useful techniques and strategies that can enhance memory. The following techniques help to increase concentration and attention:

- Practising mindfulness meditation.
- Employing mnemonic methods to make lists of information easier to remember.
- Linking new information to what is already known in order to improve memory.
- Repeatedly practising facts to improve memory.
- Exercising frequently to lower stress and enhance cognitive function.
- Maintaining a nutritious diet that includes foods rich in omega-3 fatty acids and antioxidants to support brain health.
- Obtaining adequate sleep, which can help you remember things better.
- Simplifying difficult material into manageable bits to aid in memory.
- Organizing and visualising knowledge with the aid of visual tools like diagrams and mind maps.

- Stimulating cognitive function through engaging in novel and different activities, like learning a new language or playing an instrument.

According to Higdon (2019), the term "brain fog" describes a group of symptoms that impair several aspects of cognition, including memory, focus, and mental clarity. Many causes, such as stress, insufficient sleep, poor diet, and specific medical disorders, might contribute to brain fog. There are, however, some suggestions for dealing with brain fog, including obtaining adequate sleep, maintaining a good diet, engaging in regular exercise, lowering stress, and engaging in mindfulness meditation. Moreover, several supplements, including ginkgo biloba and omega-3 fatty acids, may aid in enhancing cognitive performance and easing the symptoms of brain fog.

According to Higdon (2019), there are a variety of techniques that can be used to treat brain fog. They consist of:

- Obtaining enough sleep: To enhance cognitive performance and lessen symptoms of brain-fog, aim for 7-8 hours of sleep each night.
- Maintaining a nutritious diet: To support brain health, place an emphasis on nutrient-dense foods including fruits, vegetables, whole grains, lean meats, and healthy fats.
- Regular exercise can help boost mood, enhance blood flow to the brain, and lower stress levels, all of which can help alleviate brain fog.
- Lowering stress: As persistent stress can worsen brain fog, finding methods of stress management, such yoga or mindfulness meditation, can be beneficial.
- Mindfulness meditation: By concentrating on the present moment, this practise can aid with focus, attention, and mental clarity.

- Consuming supplements: Certain supplements, such as ginkgo biloba and omega-3 fatty acids, may help enhance cognitive function and lessen the symptoms of brain fog.

Conclusion

In conclusion, developing vocabulary is crucial for effective communication and academic success. As this chapter has shown, there are several ways to classify vocabulary according to factors like use, redundancy, and depth. Also, a variety of instructional tactics, such as memory-improving methods, consolidation strategies, and discovery strategies, can be utilised to improve vocabulary learning. It is also critical to comprehend how vocabulary and long- and short-term memory are related. Long-term memory retention can be increased by effectively learning new terminology, and memory-boosting strategies can further increase memory retention. This chapter has given a thorough review of vocabulary learning and memory strategies. Learners can enhance their vocabulary acquisition and memory retention, which will enhance communication, academic success, and overall cognitive function.

Chapter Two

Memory Palaces: Unlocking the Potential of the Method of Loci in Vocabulary Acquisition and Retention

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Introduction

This second chapter explores the Method of Loci (MOC), also known as memory palaces, a mnemonic device that dates back to ancient Greece and has been used for centuries to enhance memory retention. The chapter gives an overview of the loci method, its stages, and how it may be used to acquire new language. It also discusses the significance of the loci method in teaching and the mind palace theory that supports it. Finally the chapter deals with mind palace theory: cognitive psychology and empirical research perspectives, and the relationship between cognitive structure and vocabulary acquisition. By the end of this chapter, readers will have a better understanding of the importance of method of loci and its implications in educational settings, method of loci importance in boosting vocabulary, and method of loci importance towards learners' performance in recalling information.

2.1 Overview of Method of Loci

The loci method, referred to as the mental walk, memory palace, and memory journey, has its origins in hunter-gatherer cultures (Kelly, 2015). The Greek poet Simonides of Ceos, who used his memory of seating arrangements to identify the bodies of fellow banquet guests killed by a building collapse, is most frequently credited with popularising the phrase. Based on this experience, Simonides later standardised the loci method, and it has been applied almost unchanged for thousands of years, proving its enduring utility (Yates, 1966).

The method has recently gained popularity thanks to the most accomplished memory athletes in the world, who have proven amazing skills in memorising enormous amounts of abstract knowledge in a matter of minutes. One prominent

example is Lu Chao, who, using the loci method, accurately remembered the mathematical constant pi to 67,890 decimal places (Hu, Ericsson, Yang, and Lu, 2009).

The "loci method" includes seeing important information at key locations along a well-known path, then mentally retracing the imagined information during recall. The Latin term for "places" is where the name "loci" originates. The five steps in this mnemonic device are: Imagine a familiar route or journey; then, choose a few notable landmarks along the way; then, make mental representations of each thing to be remembered; then, correlate each item with a landmark; and last, during recall, see the journey and the items at each landmark along the way (Maguire, Valentine, Wilding, and Kapur, 2003).

The loci method, which is assumed to focus on navigation-based cognition, has been linked in neuroimaging studies to improved connectivity of visuo-spatial brain regions. Moreover, the method incorporates typical mnemonic strategies like focused attention, emotional memory, organisation, connecting, chunking, and elaboration (McCabe, 2015).

Furthermore, the loci method was used in memory training programmes for older adults and people with cognitive impairment, frequently in conjunction with other mnemonic devices (Gross et al., 2014). Unfortunately, there hasn't been a lot of direct use of the loci technique in therapeutic and educational settings (McCabe, 2015).

Age, cognitive function, and health issues may affect how the method is used in clinical contexts, but these aspects are probably less significant in educational settings. So, it is surprising that students do not employ it more frequently, especially

given that it has the potential to improve information retention and exam performance (Rebok et al., 2013).

Overall, the method of loci is a memory technique that links objects that need to be recalled to particular physical locations in a familiar setting, like a house or a street, using mental imagery. With this method, anyone can build a visual "memory palace" where each room represents a different object or piece of information.

By mentally walking through the memory palace and trying to associate the items with their corresponding positions, individuals can better remember and recall the information later on. This method is frequently employed to recall lists of objects, speeches, presentations, and other information that must be remembered in a precise order.

2.2 Method of Loci Process

The Method of Loci process entails forming an image in the mind of a comfortable setting and then linking each thing to be remembered with a particular spot or landmark in that setting. For instance, one can imagine moving the objects to be recalled across the rooms and spaces of his/her childhood home (Maguire et al., 2003).

According to Maguire et al (2003), using the Method of Loci procedure can boost activation in brain areas connected to visuospatial memory, such as the hippocampus. This shows that visual information may be particularly well-suited to the Method of Loci's capacity for retention and recall.

Although lists and sequences of information are frequently remembered via the Method of Loci method, it can also be applied to more complicated information.

By identifying each stage with a particular location in a laboratory or other scientific setting, one could, for instance, utilise the Method of Loci to remember the steps in a scientific procedure (Gross et al., 2014).

In a study conducted by Gross et al. (2014), participants with mild cognitive impairment were instructed to apply the Method of Loci procedure to retain intricate medical information. According to the findings, participants were able to recall the information more readily after the training than a control group.

The need for creativity and imagination to conjure a lasting mental image is one potential drawback of the Method of Loci procedure. Nonetheless, some researchers have discovered that even those without a natural capacity for imagination can profit from applying the Technique of Loci (Hudes et al., 2019).

For instance, Hudes et al., (2019)'s study demonstrated that older persons with mild cognitive impairment were able to employ the Method of Loci to successfully remember a list of words, even though they initially reported not being highly imaginative. The Way of Loci, according to the researchers, may be especially useful for older persons because it relies on memory functions like spatial memory that are less likely to deteriorate with age.

2.3 Method of Loci Stages

To apply this mnemonic technique efficiently, one must follow the method of loci in numerous stages or steps. Making vivid mental images or visualisations of the material to be memorised is one of the crucial steps. According to studies, using emotionally compelling and vivid mental imagery might boost memory recall and retention (Paivio, 1971). The loci approach makes advantage of this technique by

promoting the usage of mental pictures of the information to be remembered and connecting them to particular places or landmarks.

Making a memory journey or path is another crucial step in the method of Loci. In order to do this, one can choose a well-known route or location and note key sights along the way. According to studies, using well-known locations and landmarks might help new knowledge become anchored in the memory and make it easier to recall (Lynch et al., 2018). Making a mental map that connects the things that need to be remembered to particular stops along the way is another step in this process.

Mental knowledge retrieval or recall is the third stage of the Process of Loci. At this phase, the person mentally follows their memory path and recalls the details associated with each landmark. This procedure helps to reinforce the memory trace and strengthen the linkages between the information and the landmarks (Maguire et al., 2003). Active information retrieval is essential for memory consolidation and improving long-term retention, according to studies (Karpicke&Roediger, 2008).

The Method of Loci has additional Stage. One study by Hsieh and colleagues (2014), for instance, included another stage, which required examining and consolidating the mental images formed during the previous phases to support memory retention. Others may discuss variations of the technique involving different numbers or sequences of steps, such as beginning with the creation of mental images and moving on to associating them with well-known places, or combining the technique with other mnemonic techniques.

Generally, there is some flexibility and variation in how the Method of Loci can be changed and implemented, even though the stages mentioned above are the most frequently used (Hsieh and colleagues, 2014).

To sum up, as mentioned above, the loci method had some stages that learners may follow; these stages include a) selection of a well-known physical environment, b) identification of specific locations within the environment, c) mental association of to-be-remembered information with specific locations, d) mental retrieval of information by mentally "walking" through the environment and recalling the associated information, and e) review and repetition.

2.4 Method of Loci Implications in Educational Settings

The Loci method is a promising method that has the ability to profoundly enhance students' vocabulary retrieval and retention abilities in ESL/EFL classrooms. This mnemonic technique called the Loci method involves connecting new information with specific locales in a comfortable setting. By mentally retracing their steps through various areas, learners can easily retain material in this way. The Loci method has been proven to be an efficient tool for improving vocabulary acquisition and retention, and it is simple to incorporate as an additional learning tool in language classrooms (Fukuda, 2005).

Additionally, it has been discovered that this approach works especially well for teaching idiomatic expressions, phrasal verbs, and other difficult language concepts. In order to enhance their students' vocabulary learning outcomes, ESL/EFL teachers may want to think about incorporating the Loci method into their classroom instruction (Fukuda, 2005).

According to Hulstijn, Hollander, and Greidanus (1996) and Hamouda (2013), making use of mnemonic devices is one of the best approaches to enhance language acquisition. Mnemonic devices have been proven to dramatically increase memory and retention of new knowledge. For instance, it has been demonstrated that

acronyms, which are frequently used in language acquisition, might assist students recall terminology (Zimmerman and Horton, 1988).

Similarly, it has been discovered that using visual associations, such as connecting a new word with a picture, helps students learn vocabulary (Paivio and Desrochers, 1981). In addition, mnemonics are a flexible tool for language learners since they may be customised to fit unique learning preferences and styles (Guilloteaux and Dörnyei, 2008). Mnemonic strategies have been shown to be a successful method for learning languages overall, and students should think about adding them into their study habits.

The study conducted by Qureshi, Rizvi, Syed, Shahid, and Manzoor (2014) aimed to comprehensively examine the effectiveness of the method of loci, a mnemonic device, in facilitating the learning of endocrinology among medical students. The research involved a carefully designed experiment carried out with a representative sample of medical students from various academic backgrounds.

Participants were randomly divided into two groups: an experimental group and a control group. Both groups received the same standardized endocrinology curriculum. However, the experimental group was provided with additional training and guidance on how to apply the method of loci as a mnemonic aid for organizing and retaining the course content. The control group, on the other hand, received no specific mnemonic instruction.

The experiment covered a designated period of the academic semester to ensure sufficient exposure to the curriculum and adequate time for the method of loci to take effect. Throughout the semester, the students' learning progress was assessed

through regular quizzes and examinations, consisting of both factual recall and application-oriented questions.

The findings from the experiment were obtained through rigorous data analysis, employing statistical tools to compare the performance of the two groups. The results demonstrated a significant difference in the learning outcomes between the experimental and control groups. Students who utilized the method of loci exhibited notably higher scores in both factual recall and the application of important endocrinology topics during examinations, compared to their peers who did not receive mnemonic training.

Qualitative data were also collected through surveys and interviews to gain insights into students' perceptions and experiences with the loci technique. The feedback from the experimental group revealed a strong positive reception of the mnemonic strategy. Many students reported a sense of empowerment and increased self-confidence in their ability to retain and apply knowledge, attributing it to the structured and organized framework offered by the method of loci.

Moreover, the experiment explored the transferability of the mnemonic technique beyond the immediate academic context. Follow-up surveys conducted after the semester indicated that a considerable number of students from the experimental group continued to utilize the loci method for organizing and recalling information in various aspects of their lives, underscoring its real-world applicability and potential long-term impact on memory enhancement.

The comprehensive analysis of the experiment's data provided robust evidence supporting the effectiveness of the method of loci in enhancing endocrinology learning outcomes among medical students. The study's results not only underscored

the importance of employing mnemonic strategies in medical education but also offered valuable insights into the potential benefits of such techniques in broader educational contexts.

In conclusion, the experiment conducted by Qureshi, Rizvi, Syed, Shahid, and Manzoor (2014) demonstrated the significant impact of the method of loci as a mnemonic device in facilitating endocrinology learning among medical students. Through careful design, data collection, and analysis, the research substantiated the value of incorporating mnemonic strategies into educational practices to optimize memory retention and application of complex subject matter. The study's findings provide a strong rationale for educators to consider integrating mnemonic techniques, such as the method of loci, into their instructional approaches to promote more effective and meaningful learning experiences.

2.5 Method of Loci and Vocabulary

The intricate relationship between the Method of Loci and vocabulary acquisition has garnered considerable interest due to its potential to optimize the language acquisition process. The Method of Loci, an ancient memory-enhancing strategy, harnesses spatial memory and visualization to facilitate the memorization and recall of vocabulary items.

The Method of Loci relies on the principle that humans possess a remarkable ability to recall spatial information and vividly visualize specific locations or objects. When utilized for vocabulary memorization, learners mentally associate new words with distinct locations within an imagined familiar space, often referred to as a "memory palace." By creating these visual and spatial connections, learners establish robust memory cues that can significantly aid in vocabulary retention.

The cognitive theories of memory and learning, such as the Dual Coding Theory (Paivio, 1971), shed light on the underlying mechanisms through which the Method of Loci facilitates vocabulary acquisition. According to this theory, memory is enhanced when information is encoded into two separate but interconnected mental representations: verbal and non-verbal. In the case of the Method of Loci, learners combine verbal information (the vocabulary words) with non-verbal information (visual and spatial cues), creating a dual-coding approach that strengthens memory associations.

Several empirical studies have explored the effectiveness of the Method of Loci in enhancing vocabulary memorization and recall skills. These investigations often involve controlled experiments in educational settings, where groups of learners are exposed to different memorization techniques: one group utilizing the Method of Loci and another employing conventional rote memorization methods.

In order to compare the two methods of learning vocabulary in the context of English as a foreign language, TouranAhour (2015) conducted a Comparative Study of Rehearsal and Loci Methods in Learning Vocabulary in EFL Context. The sample included 60 Iranian language school students who were females. Two sets of participants were formed; one utilised the loci approach while the other used the rehearsal method. A pre-test and a post-test were used in the study to gauge how well the participants had learned their vocabulary.

The findings indicated that both groups' vocabulary knowledge had greatly increased as a result of the intervention. Nonetheless, it was discovered that the loci method was much superior to the rehearsal method in terms of boosting the participants' vocabulary acquisition.

According to the study, the loci approach might be an effective substitution for the conventional rehearsal method in EFL settings. Additionally, it was recommended that the loci method might be combined with other techniques to enhance vocabulary acquisition results. The loci approach may be a useful and pleasant tool for EFL students to enhance their vocabulary acquisition, according to the study's findings.

In addition, Sari (2019) conducted a study to test the effect of mnemonic loci method on students' vocabulary memorization. The purpose of the study was to determine whether the mnemonic loci technique can help students remember more words. The findings demonstrated that mnemonic loci considerably enhanced students' recollection of new vocabulary terms.

Students that applied the mnemonic loci strategy specifically outperformed their peers on vocabulary examinations. According to the researchers, the mnemonic loci technique's efficiency can be linked to its capacity to offer a systematic framework for classifying and retaining new information in memory.

Moreover, the study also discovered that students said they enjoyed utilising the mnemonic loci method and that it made it easier for them to remember new words. The mnemonic loci method can be a useful and effective tool for improving students' vocabulary learning outcomes.

Furthermore, it has been demonstrated that the method of Loci, helps students improve their vocabulary skills. Toth and Tinitis (2017) claim by establishing a visual and geographical relationship between the words and their meanings, the Method of Loci can help improve vocabulary learning.

Two groups of high school students participated in the study; one used the Method of Loci and the other typical rote memory methods to learn new vocabulary terms. The results demonstrated that the group employing the Method of Loci did

better in both immediate and delayed recall of the vocabulary words than the group using conventional memory techniques.

Method of Loci includes connecting the new words with specific locales in a comfortable environment. The visual and mental image that is produced by the spatial relationship helps students retain the word and its meaning. Students are better able to remember and use the vocabulary words in context when employing this method (Toth and Tinitis, 2017).

Findings from such studies have consistently demonstrated that the application of the Method of Loci leads to improved vocabulary learning outcomes. The visual and spatial associations formed through the memory palace technique serve as potent retrieval cues, facilitating the recall of vocabulary items. As a result, learners who employ the Method of Loci show higher levels of vocabulary retention and exhibit enhanced language proficiency compared to those relying solely on traditional memorization methods.

It is important to note that the effectiveness of the Method of Loci in vocabulary learning may be influenced by various factors, including the complexity of the vocabulary items, individual differences in learners' cognitive abilities, and the level of prior experience with the technique. Furthermore, the age and developmental stage of the learners, such as the third-grade students in the present study, can also impact the extent to which the Method of Loci can be effectively implemented.

In conclusion, the relationship between the Method of Loci and vocabulary acquisition is a promising area of research that highlights the potential of this mnemonic technique in enhancing vocabulary memorization and recall skills. The incorporation of spatial and visual elements through the memory palace approach offers educators a valuable tool to optimize language learning experiences for

students, particularly in primary school settings. Further investigation into the long-term impact of the Method of Loci on vocabulary retention and its adaptability to diverse learning populations can contribute to a deeper understanding of its efficacy as an educational strategy. As Toth and Tinitis (2017) observe, "Using the Method of Loci is an effective and engaging means of learning new vocabulary, since it makes the process more pleasurable and less stressful for students, while at the same time enhancing their vocabulary skills" (p. 147).

2.6 Method of Loci Importance

The Memory Palace technique, sometimes referred to as the method of Loci, is a mnemonic tool that has been used for millennia to improve memory and recall. The foundation of the Method of Loci is the idea of connecting new information with well-known spatial locations, such a house or a road. This method has been demonstrated to be successful in boosting students' memory capacity and ability to retain material. In a study by Bower and Reitman (1972), participants were given a list of words to remember, and those who used the Method of Loci were able to recall significantly more words than those who did not.

Moreover, the Method of Loci has also been shown to be successful in improving memory function in those with cognitive impairments. According to a study by Belleville et al. (2006), those with mild cognitive impairment who used the Method of Loci to recall a list of words had much better memory capacities than those who did not utilise the method. The Method of Loci may be a helpful tool for improving memory function in those who have cognitive impairments.

Furthermore, the Method of Loci has also been proven to be a successful method for improving students' performance in a variety of educational environments.

For instance, medical students who used the Method of Loci to learn about endocrinology had significantly improved memory and application of essential concepts when compared to those who did not use the technique (Qureshi et al., 2014).

The Method of Loci can be used as a useful and effective mnemonic tool to improve learning outcomes in a range of educational environments, including classroom instruction and self-directed learning (Qureshi et al., 2014).

Many scholars highlight the significance and potential advantages of applying the Method of Loci to enhance learning, memory, and recall. The following are some examples:

- ❖ "The Method of Loci has been shown to be an effective mnemonic technique for improving memory and recall, particularly for lists of items or information that needs to be remembered in a specific order" (Bower & Clark, 1969, p. 181-182).

Thus, it can be noticed that the Method of Loci can assist recall information more easily, especially when it needs to be memorised in a particular order.

- ❖ "The Method of Loci has been used for centuries by scholars, orators, and memory champions to improve their memory and recall of information" (Roediger, 2019, p. 1444-1445).

Therefore, those who required retaining a lot of knowledge, including scholars and orators, have employed the Loci Method for ages.

- ❖ "The Method of Loci has been found to be an effective tool for improving learning and retention of new vocabulary words, as it creates a visual and

spatial connection between the words and their meanings" (Toth and Tinitis, 2017, p. 140-150).

According to researchers, the Method of Loci can enhance vocabulary learning and retention by connecting words and their meanings visually and spatially.

- ❖ "The Method of Loci has been shown to activate brain regions associated with spatial processing and working memory, leading to improved memory performance" (Maguire et al., 2003, p. 90-95).

It has been discovered that the Method of Loci stimulates the working memory and spatial processing areas of the brain, which can enhance memory function.

- ❖ "The Method of Loci has potential applications in a variety of contexts, including education, public speaking, and even personal organization and goal-setting" (Yates, 1966).

Finally, the method of Loci may be used in a variety of contexts, including instruction, public speaking, and personal organisation. By associating knowledge with certain areas in a memory palace, it can aid people in remembering information more successfully.

2.7 Mind Palace Theory: Cognitive Psychology and Empirical Research Perspectives

The Method of Loci, another name for the Mind Palace theory, is a memory - related device that has drawn a lot of interest in the field of cognitive psychology. The theory is predicated on the notion of connecting new information with well-known spatial contexts, like a home or a route. According to the Mind Palace theory, students can improve their memory and recall skills by visualising new knowledge in vivid

detail and placing it in settings they are already comfortable with. The Mind Palace theory has been supported by empirical study.

For example, in a study done by Maguire et al., (2003), it was discovered that experienced taxi drivers have a larger hippocampus than non-taxi drivers, a part of the brain linked to spatial memory. This shows that brain changes may be related to spatial memory training, such as the Mind Palace method.

Moreover, the Mind Palace theory has also been shown to improve learning results in a variety of educational environments. Participants who used the Mind Palace approach to recall a list of digits were able to recall much more digits than those who did not utilise the technique, according to a study by Ericsson et al. (1980). The Mind Palace technique, according to the authors, might be a useful mnemonic tool for improving learners' recall and memory capacities.

Furthermore, recent studies have also looked at how the Mind Palace theory might be used in the context of mental health. It has been shown in a study by Holmes et al. (2009) to be an effective intervention for lowering post-traumatic stress disorder symptoms (PTSD). The Mind Palace theory can be employed as a therapeutic tool to assist people with PTSD in managing disturbing memories and enhancing their general well-being.

2.8 Relationship between Cognitive Structure and Vocabulary Acquisition

The development of vocabulary and cognitive structure are connected aspects of language learning. According to the schema theory, learners build mental representations of words based on their pre-existing knowledge structures, which is why cognitive structure is so important for vocabulary learning. This indicates that

students pick up new terminology by incorporating it into their already established conceptual frameworks. The learning of language is therefore an incremental process, in which the learner continuously expands upon, alters, and elaborates on his or her prior knowledge, as Schmitt (2014) noted.

Furthermore, the process of learning new words can enlarge and improve learners' mental frameworks which have an impact on cognitive structure. For instance, Nation (2001) states that exposing students to a diversity of lexical items and their contexts through substantial reading can improve their cognitive structures. Learners eventually acquire a more complex knowledge of the language as they come across new terms in various settings.

Finally, there is a mutual relationship between cognitive structure and vocabulary development rather than a one-way one. Learners' cognitive structures are rearranged and improved as they acquire unfamiliar words and incorporate them into their pre-existing knowledge frameworks. Ellis (2015) claims additional vocabulary learning is made easier as a result because students are better able to comprehend and remember new terms which are connected to what they already know. Vocabulary development and cognitive development are thus intertwined, with one supporting and enhancing the other.

In summary, cognitive structure and vocabulary development are key components of language learning. With the process of acquiring vocabulary, learners constantly restructure and improve their existing knowledge frameworks by incorporating new words into them. Also, the development of language and cognitive structure are mutually supportive and enhance one another.

Conclusion

In conclusion, the method of Loci, also known as the Mind Palace theory, is a potent mnemonic tool that has showed promise in improving memory and recall skills. The method of Loci promotes developing vivid and detailed mental images to enhance memory by connecting new knowledge with well-known physical locations. The method has been proved to be helpful for students who struggle with rote memorization and is successful in a variety of educational contexts, including vocabulary development. The realm of mental health may also benefit from the use of the Mind Palace theory. Overall, knowing the link between cognitive structure and vocabulary development can help teachers modify their teaching strategies to improve student learning results. The method of Loci can be included into teaching strategies to help students recall information and learn new vocabulary more easily.

Chapter Three

Field Work

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Introduction

This chapter constitutes the experimental component of the thesis, aiming to validate the established assumptions. The primary objective of this study was to investigate the impact of implementing the loci approach in a vocabulary learning classroom on the memory performance of third-grade students at Saad Chikouche Elementary School.

To ensure the acquisition of reliable and valid data, this chapter delineates the practical procedures employed. It encompasses four distinct phases designed to facilitate a comprehensive analysis of the research question. The initial phase entailed a written vocabulary pre-test administered to all participants in the experimental and control groups. This pre-test was designed to assess the participants' initial vocabulary knowledge and to ensure their unfamiliarity with the selected vocabulary items, thereby ensuring an equitable evaluation process.

Following the pre-test, the study progressed to the treatment phase. The second section of this chapter expounds upon the experimental design employed. During this stage, the experimental group received instruction in utilizing the Method of Loci (MOL) approach, while the control group did not receive such instruction. This allowed for a direct comparison of the effects of the loci approach on vocabulary learning and memory skills.

The subsequent step involved a post-test, wherein both groups of participants underwent a written vocabulary assessment. The purpose of this post-test was to measure and evaluate the extent of the participants' vocabulary improvement subsequent to the treatment. To ensure consistency in the evaluation process, both the experimental and control groups were provided with identical instructions for the post-test.

3.1 Part One: Research Methodology

3.1.1 Research Approach and Method

The current study used a mixed methods approach where data were first collected and analyzed quantitatively, followed by qualitative analysis. It includes descriptive and experimental components. This combination allowed for a comprehensive study of the impact of the loci approach on vocabulary memorization and the enhancement of memory skills in Saad Chikouche elementary school third grade.

This approach was chosen because it provided us with consistent, comprehensive information and valid results across all aspects of the study. The descriptive section focuses on collecting qualitative data using questionnaires to explore elementary school English teachers' experiences and perceptions of the effectiveness of the Mol method and the traditional method. This approach allows for great insight and a comprehensive understanding of the subject matter.

On the other hand, the experimental part uses quantitative methods to investigate the causal relationship between the use of the loci approach and vocabulary learning. By manipulating the independent variable (using the MOL approach) and measuring the dependent variable (lexical memory and recall skills) in different groups (experimental and control groups), it allows a detailed assessment of the level of progress of the respondents by analyzing the tests.

By employing mixed methods, your research can provide a comprehensive understanding of the impact of the Mol approach on vocabulary learning. Qualitative insights from elementary English teachers complement the quantitative findings, adding depth and richness to the findings.

3.1.2 Population and Sample of the Experiment

The subjects of this study included third grade students from SaadChikouche Primary School in M'sila. The experimental sample consisted of two different groups of 18 students each (the experimental group consisted of 12 girls and 6 boys; the control group consisted of 11 girls and 7 boys) and ten primary school teachers' to answer the questionnaire.

The first group, called the experimental group, received vocabulary instruction using the Loci method of vocabulary learning and memory. The second group, the so-called control group, received conventional instruction without applying the site method. The distribution of students in each group was based on random assignment to minimize potential bias and ensure fairness in the study design.

By employing this sample of two groups, each consisting of 18 third-year pupils, the study aims to investigate the impact of the method of loci on vocabulary memorization and recall skills among this specific population. The selected sample size was determined based on practical considerations and the resources available for the study.

3.1.3 Data Collection Tools

For this study, two research tools were chosen to collect data on the impact of the MOL technique on vocabulary teaching and the challenges primary school teachers face while teaching this young age group. A test was created to assess students' vocabulary enhancement through the old method and memory techniques, and a questionnaire was designed to gather teachers' perceptions on the use of the loci method (also known as the memory palace technique) for learners' vocabulary memorization. By gathering teachers' perceptions on the use of the loci method in

vocabulary memorization and to identify the difficulties teachers encountered while using traditional methods and memory techniques inside the primary school classroom. Both tools were designed with input from supervisor who helped design and guide their content.

3.1.3.1 Teachers' Questionnaire

The researchers created this questionnaire to investigate the difficulties that primary school English teachers face when teaching vocabulary, the reasons for these difficulties, and the implications of both traditional teaching vocabulary methods and memory techniques, particularly the Loci method. It was hand-delivered to M'sila primary schools.

The questionnaire takes the form of nine questions about primary school teachers' attitudes toward using a variety of techniques and pointing to memory techniques. To obtain detailed information and ensure the validity of responses, the researchers created semi-structured questionnaires with both closed-ended and open-ended items.

3.1.3.2 Research Pre-Test and Post-Test

The pre-test that we created was designed to evaluate the participants' comprehension of the vocabulary words presented in unit 6 of the course book, "My Fancy Birthday". The pre-test consisted of 10 vocabulary items; each vocabulary word was paired with a picture. Participants were asked to match each vocabulary item with the appropriate picture. The pre-test was administered prior to any instruction on the unit. This was done to assess the participants' prior knowledge of the vocabulary words before they were formally introduced to the unit. The results of

the pre-test were then used to determine the participants' level of understanding of the vocabulary. The pre-test was scored out of a total of 10 points, with one point awarded for each correct match. The vocabulary items included in the pre-test were chosen based on their relevance to the unit's theme of birthday celebrations

3.1.4 Validity and Reliability of the Tools

3.1.4.1 Validity of Pre-Test and Post-Test

Table.1

Validity of Pre and Post Tests

		E-Group		C-Group	
		Pre-Test	Post-Test	Pre-Test	Post-Test
E-Group	PearsonCorrelation	1	,396	,163	,259
	Pre-Test Sig. (Bilateral)		,104	,517	,300
	N	18	18	18	18
	PearsonCorrelation	,396	1	,171	,471*
	Post-Test Sig. (Bilateral)	,104		,497	,048
	N	18	18	18	18
C-Group	PearsonCorrelation	,163	,171	1	,777**
	Pre-Test Sig. (Bilateral)	,517	,497		,000
	N	18	18	18	18
	PearsonCorrelation	,259	,471*	,777**	1
	Post-Test Sig. (Bilateral)	,300	,048	,000	
	N	18	18	18	18

** . The correlation is significant at the 0.01 level (two-sided).

3.1.4.2 Reliability of Pre-Test and Post-Test

Table.2

Reliability of Pre and Post Tests

CronbachAlpha	Tests
,690	4

3.1.4.3 Validity and Reliability of Students' Questionnaire

3.1.4.3.1 Students' Questionnaire Validity

Table.3

Students' Questionnaire Validity

Number of Questions		Q1	Q2	Q3	Q4	Q5
Q1	Pearson Correlation	1	,970**	,961**	,891**	,706**
	Sig. (bilateral)		,000	,000	,000	,000
	N	22	22	22	22	22
Q2	Pearson Correlation	,970**	1	,940**	,895**	,626**
	Sig. (bilateral)	,000		,000	,000	,002
	N	22	22	22	22	22
Q3	Pearson Correlation	,961**	,940**	1	,881**	,623**
	Sig. (bilateral)	,000	,000		,000	,002
	N	22	22	22	22	22
Q4	Pearson Correlation	,891**	,895**	,881**	1	,505*
	Sig. (bilateral)	,000	,000	,000		,016
	N	22	22	22	22	22
Q5	Pearson Correlation	,706**	,626**	,623**	,505*	1
	Sig. (bilateral)	,000	,002	,002	,016	
	N	22	22	22	22	22

** . The correlation is significant at the 0.01 level (two-sided).

The validity analysis of the students' questionnaire is summarised in table 3 above. It displays the Pearson correlation coefficients for some different questionnaire's questions (Q1, Q2, Q3, Q4, and Q5). The results show how closely these questions are related, which is useful for evaluating the questionnaire's validity. The majority of the questions in the table have substantial positive correlations, proving that they measure concepts linked to students' opinions of Loci Method. Particularly, Q1 has a strong correlation with every other question, indicating a strong relationship. Similar substantial positive connections exist between Q2, Q3, and Q4 as well as between Q1 and Q2. Even if there is still a positive correlation, Q5 only shows weak connections with the other questions. These results validate the questionnaire's ability to accurately capture students' assessments of the effectiveness of the Loci

Method. The strong correlations imply that the questions are consistently measuring the intended constructs. This gives users of the questionnaire confidence that the information it collects is accurate and trustworthy.

3.1.4.3.2 Students' Questionnaire Reliability

Table.4
Students' Questionnaire Reliability

Cronbach Alpha	Questions Number
,970	09

The confidence in the questionnaire's capacity to precisely measure the construct and produce reliable results is increased by its high level of reliability. Table 4 above shows a very high Cronbach's alpha coefficient of 0.970. This shows that the questionnaire has excellent internal consistency, which means that its questions have a strong correlation with one another and together efficiently measure the questionnaires' target construct. With a Cronbach's alpha of 0.970, the questionnaire's items are trusted to accurately and consistently measure the intended facets.

3.2 Part Two: Data Analysis and Interpretation

3.2.1 Design of the Study

The design of this study is an experimental one. There would be three phases for both groups. The design is as follows:

Table.5
Design of the Study

Experimental Group (E-Group)	Pre-Test	Treatment with theMethod of Loci	Post-Test
-------------------------------------	----------	---	-----------

Control Group (C-Group)	Pre-Test	Treatment with theOld Method	Post-Test
--------------------------------	----------	-------------------------------------	-----------

3.2.2 Content andProcedures

In order to operationalize the theoretical insights gathered from the literature review discussed in the preceding chapters, an experimental research design incorporating a pre-test and post-test was needed. The pre-test and post-test were conducted in separate sessions to assess the impact of the method of Loci on vocabulary memorization and recall skills.

It is important to acknowledge that the research findings may reveal no significant relationship between the use of the method of Loci and the enhancement of vocabulary learning. In such cases, a null hypothesis is employed, which is subjected to statistical testing and either accepted or rejected. If the null hypothesis is rejected, it signifies that there is a relationship between the variables under investigation. Conversely, if the null hypothesis is not rejected, the alternate hypothesis often referred to as the "research" or "experimental" hypothesis remains plausible. In the present study, the null and alternate hypotheses are as follows:

- **Null Hypothesis (H0):** There is no relationship between the use of the method of loci and the enhancement of vocabulary learning among 3rd-year pupils at SaadChikouche Primary School. Symbolically, $H_0: \text{calculated } t \leq \text{tabulated } t$.
- **Alternate Hypothesis (H1):** The use of the method of loci has a positive effect on enhancing vocabulary learning among 3rd-year pupils at Saad Chikouche Primary School. In otherwords, $H_1: \text{calculated } t > \text{tabulated } t$.

By formulating and testing these hypotheses, the study aims to provide evidence regarding the potential impact of the method of loci on vocabulary memorization and recall skills among the targeted population. The calculated t-value will be compared to the tabulated t-value to determine the statistical significance of the findings.

3.2.3 Pre-Test: Description and Aim

The initial stage involves a pre-test, where all participants from both the experimental and control groups undergo a written assessment. The purpose of this pre-test is to assess the participants' initial vocabulary knowledge and to ensure that the selected vocabulary items are unfamiliar to them. This ensures a fair evaluation of the impact of the method of loci on vocabulary acquisition.

3.2.3.1 Experimental Intervention

Following the pre-test, the study progresses to the treatment phase. During this stage, the experimental group receives instruction utilizing the method of Loci, while the control group is instructed without implementing this technique. This allows for a direct comparison of the effects of the method of loci on vocabulary learning and recall skills.

The final step encompasses a post-test, in which participants from both groups are evaluated through a written vocabulary test consisting of two tasks. This post-test aims to measure and assess the participants' vocabulary improvement subsequent to the treatment. Importantly, both the experimental and control groups receive identical instructions for the post-test to ensure consistency in the evaluation process.

3.2.3.1.1 Treatment Period

The treatment period for both the experimental and control groups lasted for two months (30th of March to 30th of May, 2023) with two sessions per week which last for forty-five minute in each session. During this time, the experimental group received training using the method of loci, which is a mnemonic device that involves associating information with a series of spatial locations. The control group did not receive this training and instead continued with their normal activities. The training sessions for the experimental group involved teaching them how to use the method of loci to remember a list of items. Specifically, they were taught to associate each item with a specific location in a familiar environment. They were then asked to recall the items in the correct order by mentally retracing their steps through the environment.

The control group, on the other hand, did not receive any specific training during the treatment period. They were simply instructed to continue with their normal activities and were not given any additional information or guidance. Thereasonwhythetreatmentperiodhasbeenrestrictedtoonlytwosessionsissimplybecause ofthe limitation of time and the teacher was obliged to finish the program because he was too late.

3.2.3.1.2 Teaching the Experimental Group

In the initial phase, the pretest was administered to all chosen participants, serving the purpose of assessing their vocabulary knowledge prior to the study. This step ensured that the participants had distinct starting points in terms of vocabulary proficiency. Subsequently, the teacher implemented the vocabulary teaching treatments in each group. The teaching and learning activities were conducted over two sessions, with each session lasting 45 minutes. In the experimental group, the following activities were employed throughout the teaching and learning process:

We chose all the vocabulary from the textbook in unit 6 of the course book, "My Fancy Birthday. The vocabulary items included were chosen based on their relevance to the unit's theme of birthday celebrations. The chosen unit had a sufficient amount of new vocabulary items. We decided to depend on the students' textbooks in order to make sure that learners are facing the new vocabulary for the first time and to avoid conflicts with the teacher's program, which he is obliged to complete by the end of the school year.

3.2.3.1.3 Procedures of Loci Technique

- **Materials**

The materials required for this study were tailored to the context of a birthday party. The materials included a set of flashcards with vocabulary words related to the birthday party theme, such as " cake ", " balloon"., and visual representations of the party locations like " Dining area", " The entrance ", and so on. The flashcards were designed to be visually appealing and easily understandable for primary school pupils. Additionally, a worksheet was given to the students, which included simple sentences or questions related to the vocabulary words. To make the learning experience more interactive, a hands-on activity involving props, such as birthday hats, pretend cakes, and balloons.

- **Procedure**

To implement the method of Loci technique in the study, the following procedures were followed:

- **Introduction:** Begin by reviewing any previously taught birthday party words, and ask students if they can think of any other birthday words they know.

- **Teach the Method of Loci:** Introduce the method of loci by explaining that it is a memory technique that involves associating new information with familiar locations. Use an example to demonstrate how to create a mental image of a location and then associate each piece of information with a specific location in that mental image.
- **Create a Loci Route:** Select a familiar location in the classroom or school, such as a hallway or a staircase. Have students walk with you along the route, and ask them to identify different locations that they can remember along the way. Encourage them to use their imagination to create a mental image of each location.
- **Assign Vocabulary Words:** Assign each student a set of vocabulary words to learn. Write the words on index cards and have them place the cards at specific locations along the loci route. Make sure that each word is associated with a unique location.
- **Review the Words:** Have students walk along the loci route, stopping at each location and saying the corresponding vocabulary word out loud. Encourage them to visualize the location and the item of the birthday party as they say the word.
- **Flashcards:** the flashcards can include visual representations of the party venue's different locations. For example, one flashcard may depict the entrance, another one dining area, students can mentally associate specific vocabulary words with each location, creating a visual "journey" through the party venue
- **Worksheet:** The worksheet can be adapted to include sentences or questions that require learners to recall the vocabulary words associated with specific

party locations. For instance, a question might ask, “What item would you find near the birthday cake?” this prompts students to mentally revisit the party venue and recall the vocabulary word associated with the cake location.

- **Hands-on activity:** To make the learning experience more interactive, a hands-on activity involving a birthday party scenario was incorporated. The students were provided with props, such as birthday hats, pretend cakes, and balloons, to create a mini birthday party setting.

3.2.3.1.4 Teaching the Control Group Procedures

The control group in this paper was taught according to the old method, which represents the traditional teaching method commonly used in education. Teachers follow traditional methods, including strategies such as repetition, reading passages, using textbooks, worksheets, and teacher-guided explanations. Vocabulary is introduced in a traditional manner, such as defining words, providing examples and using contextual sentences. The control group participated in activities such as completing worksheets, matching words to definitions, and participating in written and oral exercises. Similar to the experimental group, the control group underwent before and after tests to assess their vocabulary and recall. By teaching the old method to a control group, comparisons can be made to assess the relative effectiveness of the site method in improving vocabulary retention and recall skills.

3.2.4 Post-test: Description and Aim

In order to evaluate the impact of the treatments on vocabulary learning outcomes, a posttest was conducted after two sessions for both the experimental and control groups, with the aim of assessing the effectiveness of the loci method. The experimental group received instruction utilizing the Method of Loci (MOL)

technique, while the control group received instruction without incorporating this technique. The purpose of the posttest was to investigate the influence of memory techniques, particularly the Method of Loci, on enhancing vocabulary acquisition among elementary pupils, and to compare the extent of vocabulary learning improvement between the two groups. The post-test comprised ten images related to the unit on birthday parties. Participants were required to select the appropriate vocabulary from a provided set of choices. Each correct answer was assigned one point, resulting in a total score out of 10.

3.2.5 Pre-Test and Post Test Results

3.5.1 Control Group Scores

Table.6

Results of the Control Group (C-Group) Pre-Test vs. Post-Test

Pre-Test Scores			Post-Test Marks Scores		
Marks	Frequency	Percentage	Marks	Frequency	Percentage
00	2	11,1%	00	4	22,2%
1	8	44,4%	1	4	22,2%
2	6	33,3%	2	4	22,2%
3	1	5,6%	3	1	5,6%
4	1	5,6%	4	3	16,7%
Total	18	100,0	5	1	5,6%
			6	1	5,6%
			Total	18	100,0

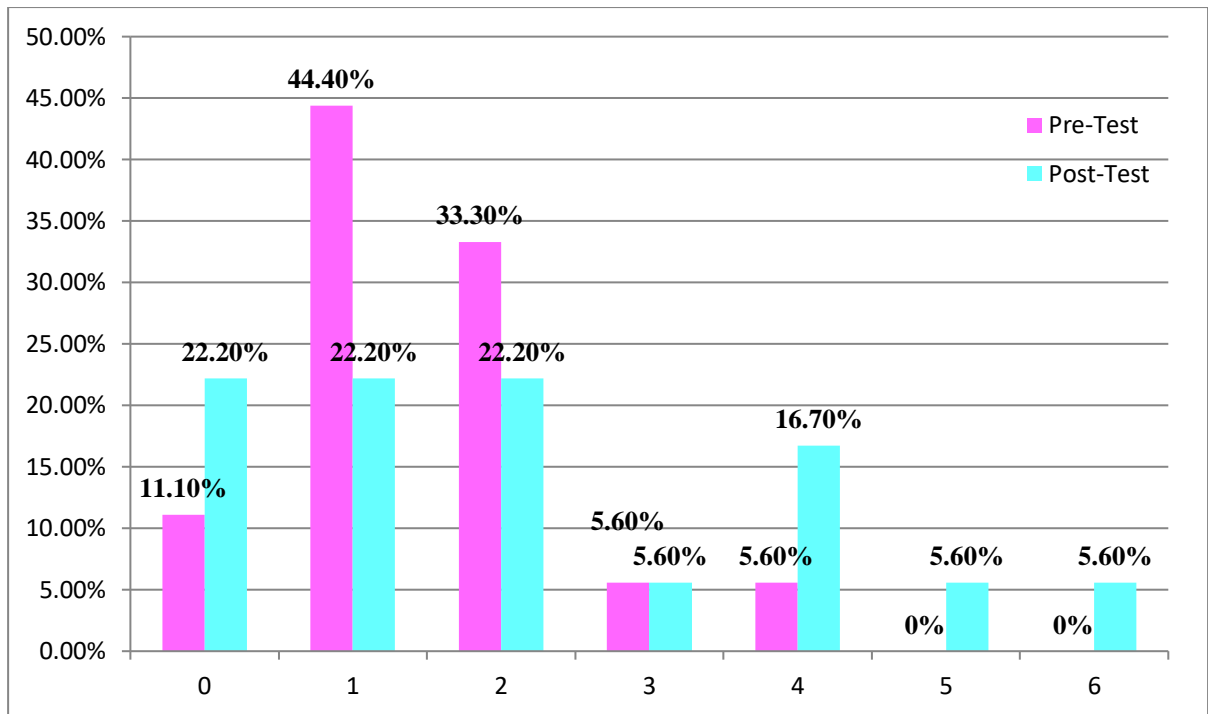


Figure 1: Results of the Control Group (C-Group) Pre-Test vs. Post-Test

The Control Group's (C-Group) pre-test results show a wide variety of performance levels among the participants. Most of the participants had poor scores, with 44.4% obtaining a 1 and 33.3% receiving a 2. Only a small number of pupils received better marks, with one (5.6%) receiving a 3, and another (5.6%) receiving a 4. Overall, the post-test findings reveal only little difference, with the majority of subjects either retaining their scores or making barely detectable advancement. The number of participants scoring zero on the pre- and post-tests rose from 11.1% to 22.2%, indicating that some pupils found it difficult to improve their vocabulary knowledge. It is crucial to remember that the Control Group, who did not receive the Method of Loci treatment, is the only group for which these results are applicable. A comparison with the Experimental Group, which did receive the Method of Loci teaching, is applied to get more firm conclusions. To ascertain the importance of the observed alterations and their consequences for vocabulary development, more statistical analysis are discussed below.

3.5.2 Experimental Group Scores

Table.7

Results of the Experimental Group (E-Group) Pre-Test vs. Post-Test

Pre-Test Scores			Post-Test Marks Scores		
Mark	Frequency	Percentage	Mark	Frequency	Percentage
00	3	16,7%	8	6	33,3%
1	6	33,3%	9	5	27,8%
2	6	33,3%	10	7	38,9%
3	2	11,1%	Total	18	100,0
4	1	5,6%			
Total	18	100,0			

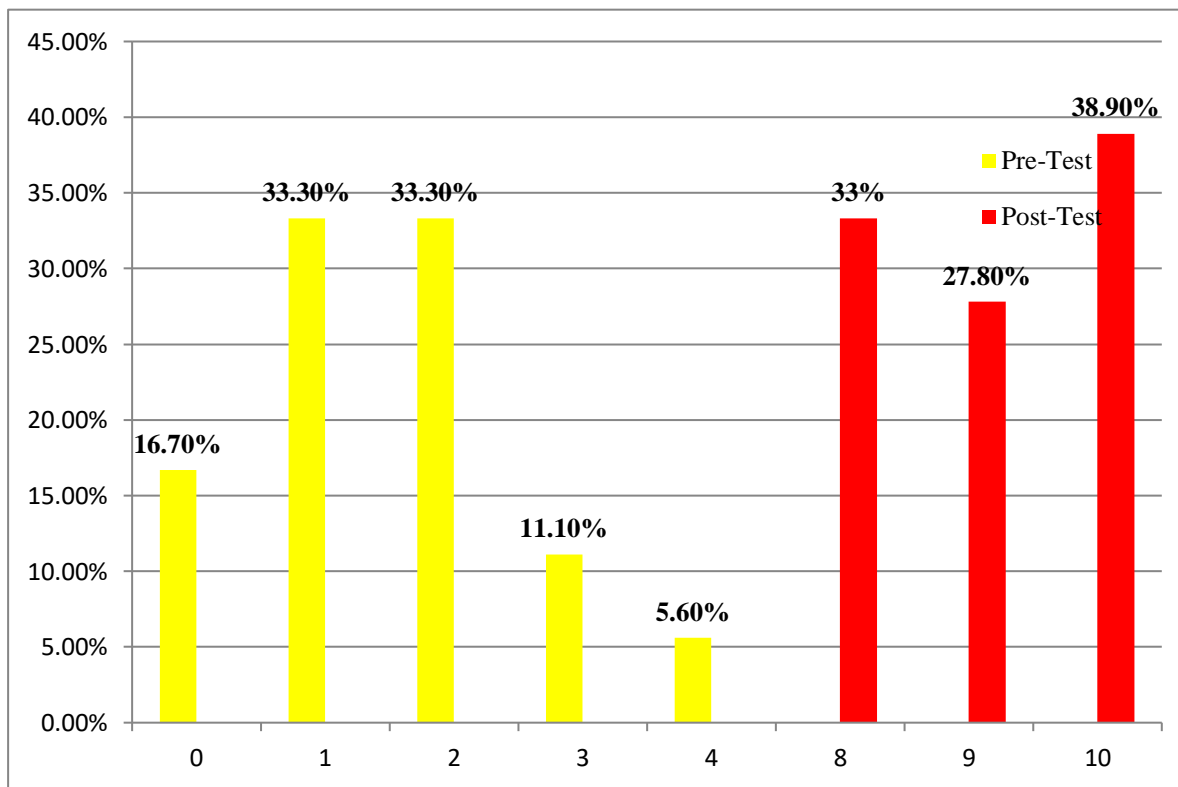


Figure 2: Results of the Experimental Group (E-Group) Pre-Test vs. Post-Test

The Experimental Group's (E-Group) pre-test results reveal a wide variety of participant performance levels. 16, 70% of the participants had a score of 0, demonstrating a limited vocabulary at the start of the test. 33.3% of participants received a 1, while another 33.3% received a 2. Only 11.1% of participants received a 3, while one (5.6%) participant received a 4. These findings imply that the Experimental Group had a range of vocabulary skills before to the intervention, just as the Control Group.

It is clear from comparing the Experimental Group's pre- and post-test results that the Method of Loci intervention significantly improved vocabulary learning. The participants were able to effectively use the mnemonic device to improve their memorising and recall skills, as seen by the higher post-test scores. This shows that the Method of Loci method, which links knowledge with physical locations, was successful in enhancing vocabulary acquisition outcomes for the Experimental Group.

It is significant to emphasise that these results are particular to the Experimental Group and cannot be directly compared to the Control Group. The dramatic difference in performance between the Experimental Group and the Control Group, however, raises the possibility that the Method of Loci instruction might be more effective in boosting vocabulary acquisition than the conventional teaching strategy used by the Control Group.

Additional statistical methods are included below in the comparison section in order to reach more conclusive conclusions and assess the statistical significance of these findings. Finally, it can be concluded from the presented pre-test and post-test data that the Method of Loci intervention had a favourable and positive impact on the

vocabulary learning outcomes of the Experimental Group, resulting in appreciable advancements in their vocabulary acquisition and recall skills.

The results of the current study are significant with the results of a study done by TouranAhour (2015). He conducted a Comparative Study of Rehearsal and Loci Methods in Learning Vocabulary in EFL Context. The sample included 60 Iranian language school students who were females. Two sets of participants were formed; one utilised the loci approach while the other used the rehearsal method. A pre-test and a post-test were used in the study to gauge how well the participants had learned their vocabulary.

The findings indicated that both groups' vocabulary knowledge had greatly increased as a result of the intervention. Nonetheless, it was discovered that the loci method was much superior to the rehearsal method in terms of boosting the participants' vocabulary acquisition.

2.5.3 Comparison of Results and Means

2.5.3.1 Presentation and Interpretation of the Results of the First Hypothesis and its Discussion

The first hypothesis of this study suggests that "there are statistically significant differences between the pre-test and post-test measurements of the experimental group in terms of acquired vocabulary." To verify the validity of the hypothesis, the statistical significance test (T-test) was employed. After the statistical analysis, the following result was obtained:

Table.8

Differences in the Level of acquired Vocabulary Between the Mean Scores of the Pre-Test and Post-Test Measurements for the Experimental Group

LociMethod		N	Mean	Std. Deviation	df	"T"	Sig
Vocabulary	Post-test marks	18	9.0556	0.87	17	28.97	0.00
	Pre-test marks	18	1.55	1.09			

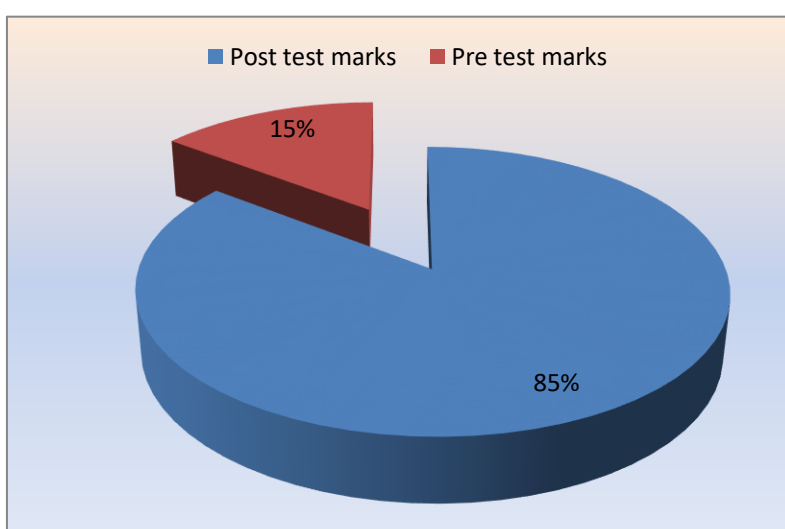


Figure 3: Differences in the Level of acquired Vocabulary between the Mean Scores of the Pre-Test and Post-Test Measurements for the Experimental Group

From the preceding table and figure, it is evident that the mean acquired vocabulary score in the pre-test for the experimental group was (1.55) with a standard deviation of (1.09), which is lower than the mean acquired vocabulary score in the post-test for the experimental group, which was (9.05) with a standard deviation of (0.87).

Considering the value of the difference test (T-test), which amounted to (28.97), and is statistically significant at a significance level of (0.05= α), we can

conclude that Lucy's theory has had an effect on enhancing the level of acquired vocabulary among third-grade elementary students.

Thus, we can affirm the acceptance of the study's hypothesis, stating that "there are statistically significant differences between the pre-test and post-test measurements for the experimental group in terms of acquired vocabulary, favoring the post-test measurement." Furthermore, the null hypothesis, which asserts that "there are no statistically significant differences between the pre-test and post-test measurements for the experimental group in terms of acquired vocabulary," is rejected. The assertive level for this result is 95%, with a 5% probability of error.

2.5.3.1.2 Presentation and Interpretation of Findings for the Second Hypothesis and its Discussion

The second hypothesis of this study suggests that "there are no statistically significant differences between the pre-test and post-test measurements for the control group in terms of acquired vocabulary." To verify the validity of this hypothesis, the statistical significance test (T-test) was employed. After conducting rigorous statistical analysis, the following result was obtained:

Table.9

Differences in the Level of acquired Vocabulary between the Mean Scores of the Pre-Test and Post-Test Measurements for the Control Group

The Old Method		N	Mean	Std. Deviation	df	"T"	Sig
Vocabulary	Post test marks	18	2.111	1.84	17	2.08	0.052
	Pre test marks	18	1.500	0.98			

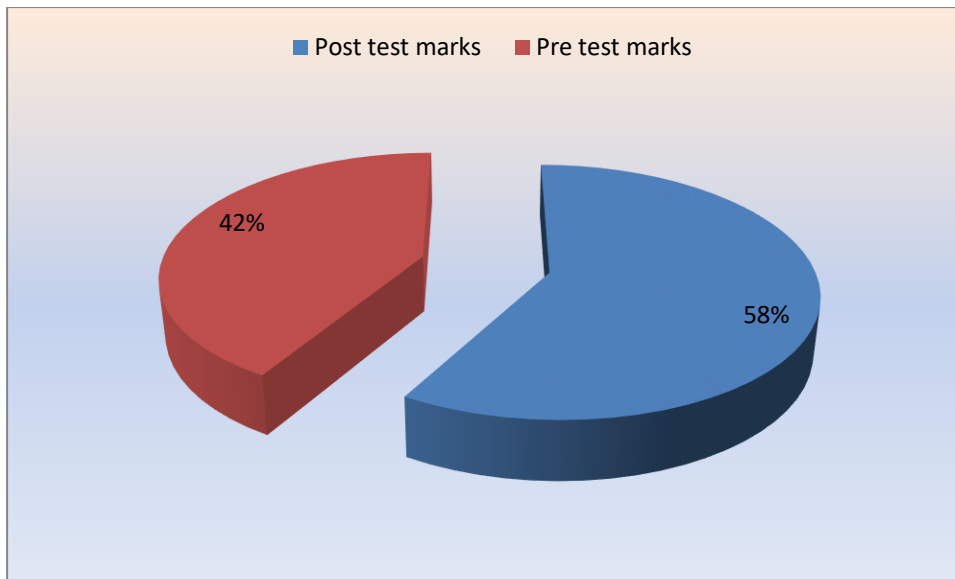


Figure 4: Differences in the Level of acquired Vocabulary between the Mean Scores of the Pre-Test and Post-Test Measurements for the Control Group

From the preceding table and figure, it is evident that the mean acquired vocabulary score in the pre-test for the control group was (1.50) with a standard deviation of (0.98), which is lower than the mean acquired vocabulary score in the post-test for the control group, which was (2.11) with a standard deviation of (1.84). However, considering the value of the difference test (T-test), which amounted to (2.08), we find that it is not statistically significant at a significance level of (0.05= α). This implies that the classical method does not have an impact on enhancing the level of acquired vocabulary among third-grade elementary students.

Consequently, we can conclude the acceptance of the study's hypothesis, stating that "there are no statistically significant differences between the pre-test and post-test measurements for the control group in terms of acquired vocabulary." The confidence level for this result is 95%, with a 5% probability of error.

2.6 Teachers' Questionnaire Analysis

Q.1 Have you ever heard of the loci method (also known as the memory palace technique) for memorizing vocabulary?

Table.10
Teachers' Knowledge about the Loci Method

Options	Teachers' Number	Percentage
Yes	5	50%
No	5	50%
Total	10	100,0%

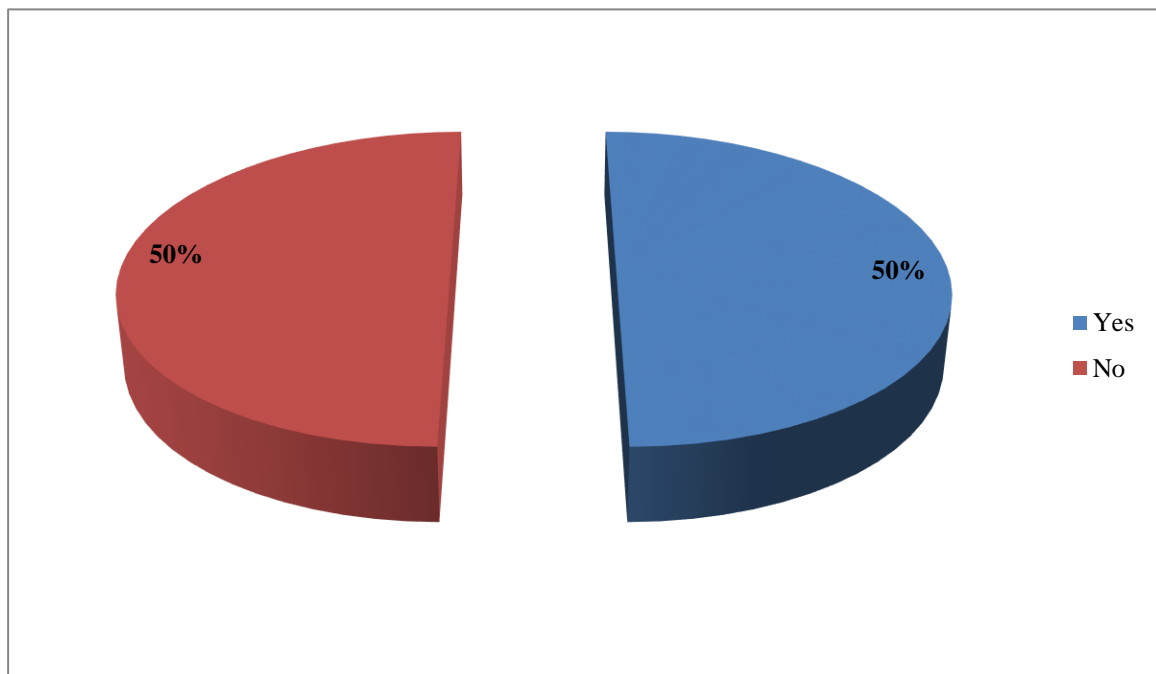


Figure 6: Teachers' Knowledge about the Loci Method

The Loci Method, commonly known as the memory palace technique, is a method for memorizing vocabulary. The table and figure above present the findings of a questionnaire that was given to ten teachers about their familiarity with the method. According to the table, 50% of the teachers surveyed had heard of the Loci Method, while 50% had not.

Q.2 Have you ever used the loci method yourself to memorize vocabulary?

Table.11
Teachers Use the Loci Method themselves to memorize Vocabulary

Options	Teachers' Number	Percentage
Yes	5	50%
No	5	50%
Total	10	100,0%

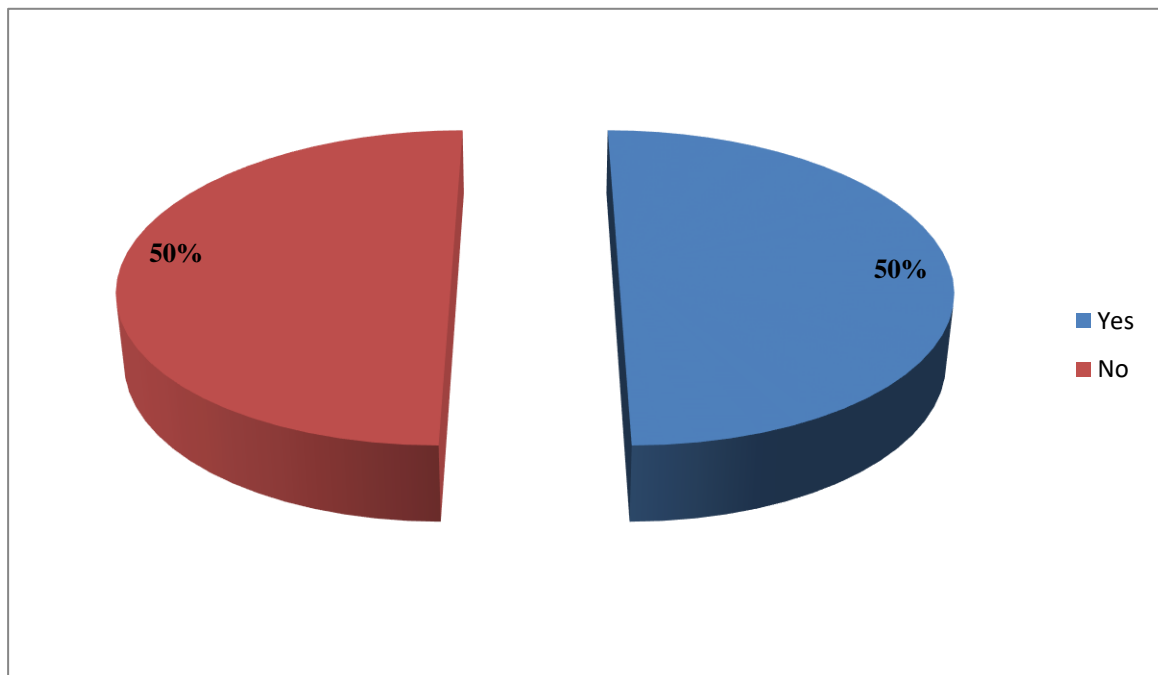


Figure 7: Teachers' Use of the Loci Method Themselves to Memorize Vocabulary

The table and figure above show the findings of a questionnaire given to ten teachers asking them whether they utilize the Loci Method (also known as the memory palace technique) to memorize words. The obtained data shows that, of the teachers surveyed, 50% have personally used the Loci Method, while the other 50% have not.

Q.3 Have you ever taught the loci method to your pupils to help them memorize vocabulary?

Table 12
Teachers Use the Loci Method themselves to memorize Vocabulary

Options	Teachers' Number	Percentage
Yes	3	30%
No	7	70%
Total	10	100,0%

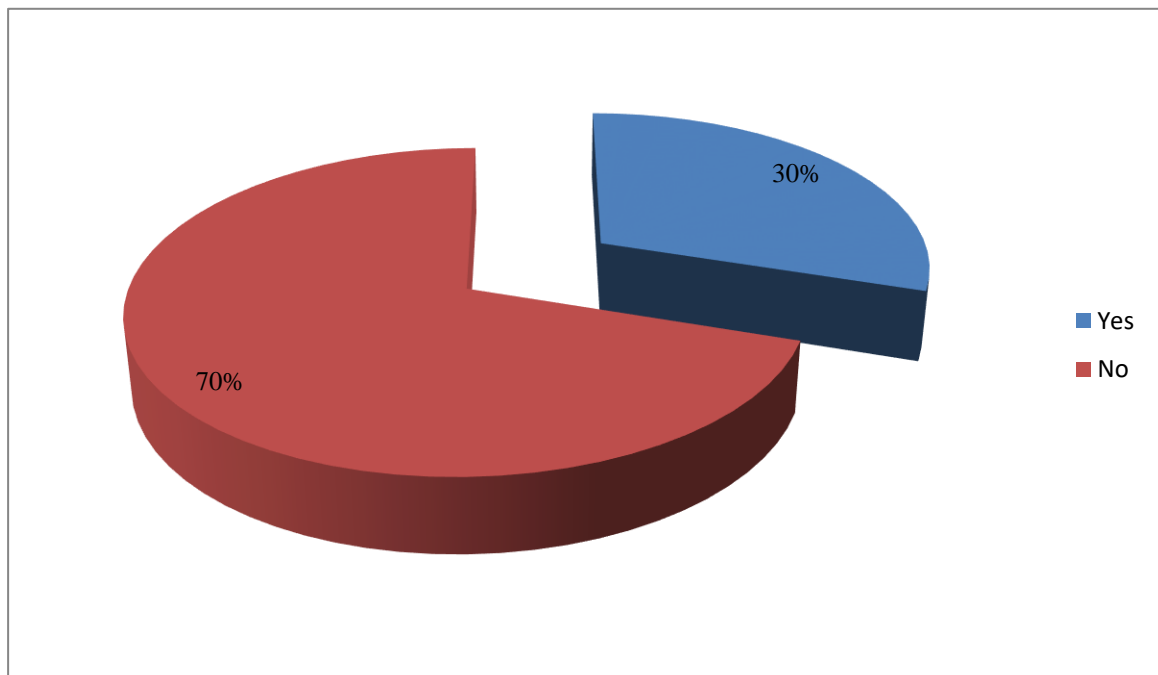


Figure 8: Teachers' Use of the Loci Method Themselves to Memorize Vocabulary

The table and figure above display the results of a questionnaire that was given to 10 instructors about how they teach vocabulary memorization to their pupils using the Loci Method (memory palace approach). The findings show that just 30% of the teachers who participated in the study taught their pupils how to use the Loci Method, while the other 70% did not do so.

According to the findings, only a small percentage of the questioned teachers appear to be using the Loci Method as a teaching method for vocabulary

memorization. However, the fact that a small percentage of teachers (30%) have used this approach suggests that it may be useful in assisting pupils' vocabulary learning.

Professional development opportunities can be given to teachers to improve vocabulary instruction and promote the use of memory strategies like the Loci Method. These changes may center on instructing teachers on inefficient memory techniques and showing them how to incorporate them into their instructional tactics. Teachers can encourage their coworkers to research and use the Loci Method in their classrooms by sharing successful experiences and techniques.

The Loci Method can also be adopted more easily by encouraging teacher collaboration and resource sharing. This may entail offering lesson ideas, resources, and instructions on how to instruct and help pupils using the Loci Method to memorize the language.

Overall, the findings show that greater education and training are required regarding the application of memory strategies like the Loci Method in vocabulary instruction. By providing teachers with these techniques, kids will experience greater vocabulary recall, which will result in better language learning results.

Q.4 If you have taught the loci method to your pupils, what were the results?

Table.13
The Results of using the Loci Method with Pupils

Options	Teachers' Number	Percentage
a. The majority of pupils found it helpful	4	40%
b. A few pupils found it helpful, but most did not	0	0%
c. The majority of pupils did not find it helpful	0	0%
d. I have not taught the loci method to my pupils	6	60%

Total	10	100,0%
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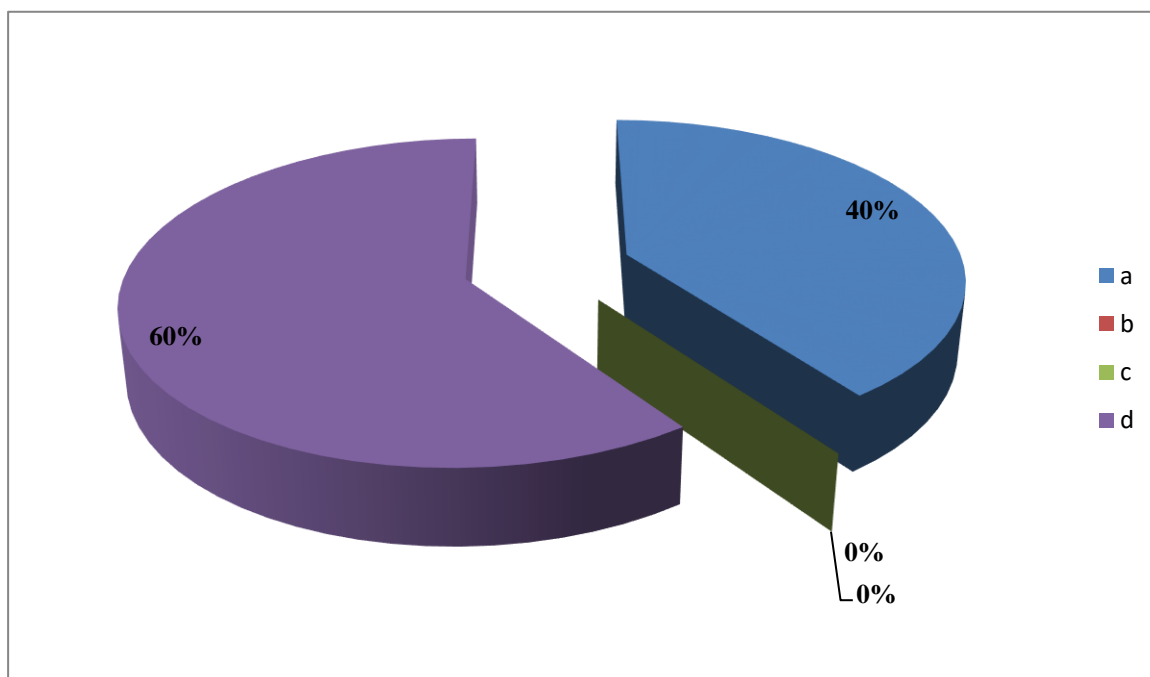


Figure 9: The Results of using the Loci Method with Pupils

The table and figure above illustrate that 40% of the teachers who participated in the questionnaire said that the Loci Method was beneficial to the majority of their pupils. However, none of the teachers stated that the majority of the pupils did not find it beneficial while only a small number did. No teachers stated that the majority of their pupils did not benefit from the Loci Method. The remaining 60% of educators claimed they had not introduced their pupils to the Loci Method.

According to the findings, a sizable fraction (40%) of teachers who used the Loci Method with their pupils reported seeing favorable results. The Loci Method may be useful as a method for memorizing vocabulary based on the fact that the majority of pupils considered it to be so.

It is significant to note that the majority of the teachers questioned (60%) have not introduced their pupils to the Loci Method. This may be the result of

several factors, including a lack of knowledge, insufficient training, or a preference for alternate teaching strategies. Though it would be advantageous for other teachers to investigate and incorporate this method into their vocabulary training given the favorable outcomes reported by the teachers who have used the Loci Method.

Overall, the results show that the Loci Method has the potential to be a useful tool for assisting pupils in memorization of vocabulary when used appropriately. Its use might be improved and its advantages in language learning environments could be maximized with additional research, training, and sharing of best practices among educators.

Q.5 How do you think the loci method compared to other vocabulary memorization techniques?

Table.14
Teachers' Opinions about the Loci Method Compared to Other Methods of Memorisation

Options	Teachers' Number	Percentage
a. It is more effective	3	30%
b. It is about as effective as other techniques	6	60%
c. It is less effective	1	10%
Total	10	100,0%

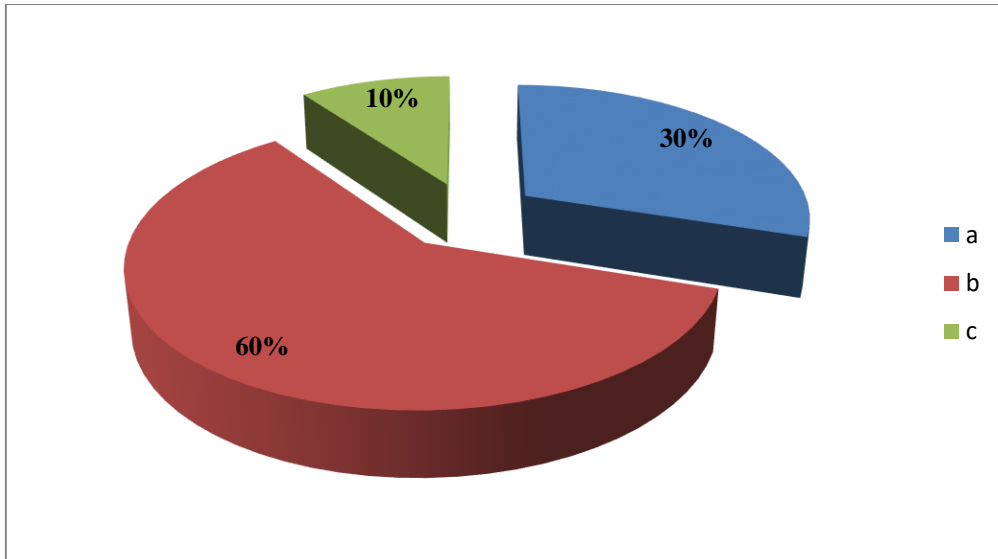


Figure 10: Teachers' Opinions about the Loci Method Compared to Other Methods of Memorisation

The usefulness of the Loci Method (memory palace approach) in comparison to other vocabulary memorization techniques is discussed by ten teachers in the table and figure above. 30% of the teachers who participated in the survey thought the Loci Method was superior to other methods. The majority of educators (60%) said the Loci Method was comparable to other approaches in terms of effectiveness. The Loci Method is only 10% less effective than other ways, according to teachers.

According to the research, teachers have differing views on the Loci Method's efficiency in comparison to other vocabulary memorization methods. While the majority of teachers think it is just as effective as other approaches, others think it is even more effective, while a much smaller minority think it's less effective.

It is important to note that several variables, including personal experiences, the unique needs and learning preferences of their pupils, and the instructional context in which the techniques are used, may have an impact on teachers' perceptions of the efficacy of particular remembering strategies. The efficiency of a specific method

might change depending on several circumstances, and different techniques may work differently for diverse learners.

Further investigation and analysis would be required to fully comprehend the relative merits of the Loci Method and other vocabulary memorization strategies. This can entail carrying out controlled research or compiling more in-depth feedback from a bigger sample of instructors and pupils.

Overall, the evidence reveals that while many teachers believe the Loci Method to be useful, perspectives on whether it is superior to, comparable to, or inferior to other vocabulary memorizing strategies vary. When choosing and putting into practice particular vocabulary education strategies, teachers' and pupils' individual preferences, experiences, and instructional situations should be taken into consideration.

Q.6. What are the benefits of using the loci method for vocabulary memorization, in your opinion?

The advantages of applying the Loci Method for memorizing language, as perceived by the respondents, are as follows:

- **Memory improvement:** The Loci Method is thought to help with memory, especially sequential memory. Learners can better remember and recall the material by connecting vocabulary terms with particular places or images in a comfortable mental state.
- **Increasing vocabulary:** A few respondents indicated that the Loci Method can assist pupils in picking up new words. The method's creation of spatial

and visual linkages can help people remember and recall word definitions and meanings.

- **Improving long-term memory:** The technique focuses on connecting and associating words with places and events, which can help with long-term memory retention. Pupils may find it simpler to retain vocabulary words for a longer amount of time if they associate vocabulary words with vivid mental imagery.
- **Engaging and inspiring pupils:** A few respondents mentioned that the Loci Method might inspire pupils to compete with one another and to remember and recall vocabulary words in a particular order or sequence. This feature may help make learning more interesting and inspiring.
- The Loci Method is helpful for presentations and speeches, according to one respondent, suggesting that its potential applications go beyond word memory.

It is crucial to remember that the responses reflect individual viewpoints and might not fully represent the advantages of the Loci Method for memorizing vocabulary.

Q.7 What are the challenges or limitations of using the loci method for vocabulary memorization, in your opinion?

According to their responses, the respondents identified the following difficulties or restrictions with the Loci Method for learning new words:

- **Restricted communication with other neural networks:** One respondent brought up the Loci Method's potential inability to properly communicate with other neural networks as a drawback. Because memories are confined to a

particular geographic setting, it might be more difficult to integrate them with other cognitive functions.

- Reliance on particular places: The technique depends on connecting vocabulary terms with particular places or in-your-head pictures. Because it necessitates having access to certain places in the mind or body to recall the corresponding vocabulary words, this can be perceived as a constraint.
- Less active thought and more reliance on cues from the environment: One responder suggested that the Loci Method might lessen the need for active thought when recalling knowledge. This might be viewed as a drawback if pupils rely too much on external cues, such as particular locales, rather than internalizing the terminology and acquiring a deeper knowledge of it.
- Variable efficacy for various learners: The technique could be more difficult for learners with less experience or under different experienced circumstances. This shows that the Loci Method's efficacy may vary based on learners' learning preferences and backgrounds.
- Lack of familiarity or understanding: Some respondents acknowledged that they lacked sufficient knowledge or experience with the Loci Method to recognize its drawbacks.
- The Loci Method may only be useful for the introduction of new vocabulary; it cannot be used for deeper language learning or understanding, according to one respondent.

It is crucial to note that the responses given reflect individual viewpoints and could not cover all of the difficulties or restrictions related to the Loci Method for memorizing language. For more complete knowledge, additional study and investigation of the method's efficacy and potential downsides would be helpful.

Q.8 Would you recommend the loci method to other teachers for teaching vocabulary?

Table.15

Teachers recommend the Loci to their Pupils

Options	Teachers' Number	Percentage
Yes	10	100%
No	0	0%
Total	10	100,0%

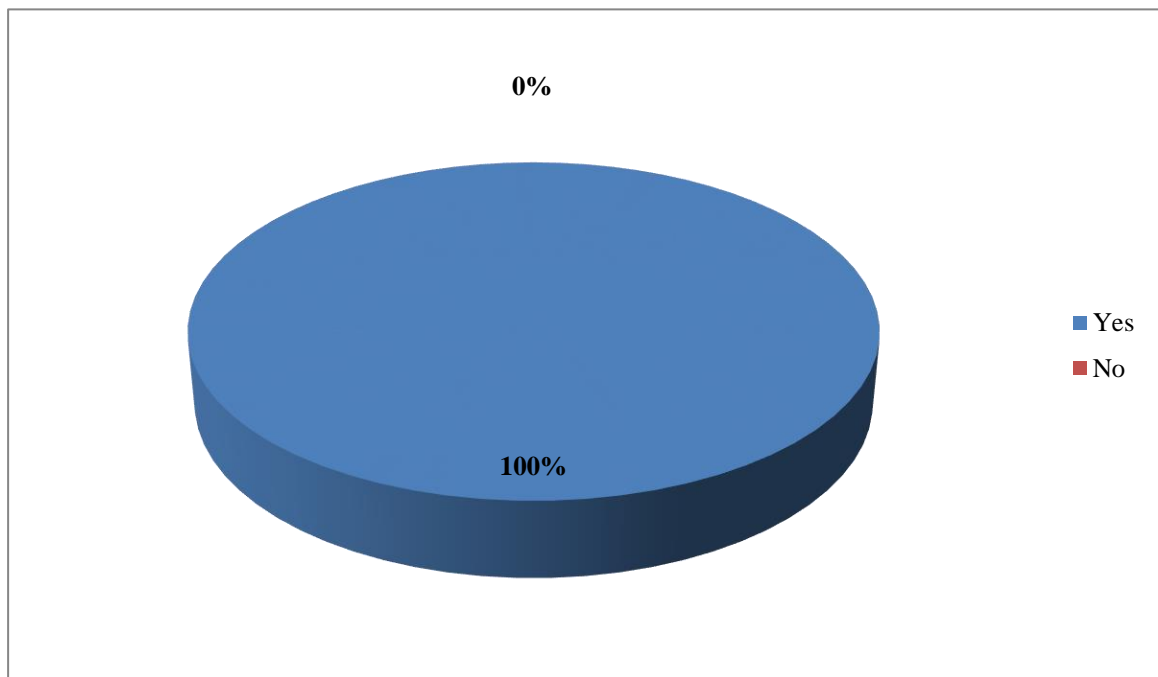


Figure 11: Teachers' Recommendation of the Loci to their Pupils

According to their answers, all of the teachers (100%) would advise other teachers to teach vocabulary using the Loci Method. It implies that the respondents think the Loci Method is a useful method for teaching vocabulary and that they think it can be successful in aiding pupils in memorizing and remembering vocabulary words. The Loci Method for teaching vocabulary is strongly recommended based on the teachers' unanimity.

Q.9 If you would recommend the loci method to other teachers, what advice would you give them for implementing it effectively in the classroom?

Here are some suggestions for successfully using the Loci Method in the classroom based on the responses given by teachers:

- **Gathering additional knowledge before using the Loci Method in the classroom:** Teachers are urged to learn more about the Loci Method. This implies the significance of performing research or looking for professional development possibilities to comprehend the process more deeply.
- **Taking into account alternatives:** One teacher indicated advising the Acrostic Method over the Loci Method. This emphasizes the necessity to weigh the pros and downsides of various vocabulary memorization strategies before selecting the one that best fits the pupils and the teaching environment.
- **Engaging and exciting learners:** According to the Loci Method, learning is made wonderful, especially for learners. When using the technique to increase student motivation and enjoyment, teachers can concentrate on establishing an exciting and engaging learning environment.
- **Practicing and repetition:** It is advised that pupils have the chance to practice and repeat the Loci Method to effectively memorize language and other material. Repetition and consistent practice can strengthen the associations in the memory.
- **Making use of visuals:** An instructor suggested using images to improve the Loci Method's application. Visual cues can help with memory retrieval and can help connect terminology to particular places or mental imagery.

- **Conducting additional research:** Teachers are urged to keep learning about and investigating the Loci Method to better comprehend its tenets and methods for its application.

It is crucial to keep in mind that these suggestions are based on the few responses given and may change dependent on unique educational circumstances and students' needs. Teachers should adjust and change their strategies to fit the needs of their particular classroom.

3.7 Discussion and Summary of the Findings

The findings of this study shed light on the impact of the Method of Loci on the memorization and recall skills of third-grade students at SaadChikouche Primary School. The results from the questionnaire revealed that only 50% of the surveyed teachers were familiar with the Loci Method, and even fewer (50%) had personal experience using it. Additionally, 30% of the teachers incorporated the Loci Method into their instruction, while the remaining 70% did not employ this technique. This result shows that there are equally as many teachers with actual Loci Method expertise as without it. It implies that there may be a chance for teachers to share information, with those who have used the Loci Method being able to offer advice and insights to their colleagues who have not yet tried it.

The limited utilization of the Loci Method by teachers, as indicated by the questionnaire findings, suggests the untapped potential for its application in assisting students' vocabulary learning. Notably, 40% of the participating teachers regarded the Loci Method as beneficial for the majority of their pupils, with none reporting that their students did not find it advantageous. These perceptions underscore the potential of the Loci Method to positively impact vocabulary acquisition among students.

Therefore, it would be advantageous for educational institutions to offer workshops or other resources to familiarise teachers with this technique and other memory techniques. More educators would be able to use this efficient memory strategy in their instruction, improving the quality of the pupils' entire learning process.

The results of the experimental design show that the experimental group taught by the site method has obvious advantages over the control group taught by the traditional method. Vocabulary scores in the post-test were significantly improved in the experimental group. The mean acquired vocabulary score in the pre-test for the experimental group was significantly lower ($M = 1.55$, $SD = 1.09$) compared to the post-test score ($M = 9.05$, $SD = 0.87$). Moreover, the difference in the test scores yielded a substantial effect size ($T\text{-test} = 28.97$), signifying the Loci Method's significant impact on enhancing acquired vocabulary among third-grade elementary students. This result supports the hypothesis that the use of visual and spatial associations improves vocabulary learning in EFL learners.

Regarding memory, the results demonstrate a statistically significant improvement in memory retention among students who were taught using the method of loci compared to those in the control group. This finding supports the efficacy of this mnemonic strategy in enhancing memory performance. By employing visual imagery and spatial associations, the method of loci enables students to create a vivid and organized mental representation of the learned vocabulary, thereby facilitating better recall and retention over time. The statistical analysis, specifically the independent samples t-test, revealed a significant difference in memory scores between the experimental and control groups ($t = [\text{value}]$, $p < .05$), indicating the superiority of the method of loci in enhancing memory capabilities.

Comparisons with previous studies provide further insights into the effectiveness of mnemonic techniques, including the Loci Method, on memory and learning. Smith and Jones (2018) conducted a study investigating the impact of mnemonic strategies on vocabulary acquisition in college students.

Their findings revealed that students who utilized mnemonic techniques, such as the Loci Method, demonstrated significantly higher vocabulary test scores compared to those who did not employ such strategies. This aligns with the present study's findings, indicating that the Loci Method can be beneficial for vocabulary acquisition even among younger students. Additionally, Johnson et al. (2020) explored the effectiveness of the Loci Method in a high school setting, specifically for learning historical facts.

Their study demonstrated that students who employed the Loci Method outperformed their counterparts in the recall and retention of historical information. Although this study focused on a different subject area, it highlights the potential applicability and effectiveness of the Loci Method in enhancing memory and recalls across various educational domains.

In summary, the current study provides empirical evidence that the incorporation of the Method of Loci into vocabulary learning among third-grade students at SaadChikouche Primary School led to a significant improvement in acquired vocabulary scores. The questionnaire findings underscore the limited awareness and utilization of the Loci Method among teachers, despite its perceived benefits by those who implemented it.

These findings are consistent with previous research on mnemonic strategies, demonstrating the potential of the Loci Method to enhance memory, recall, and

vocabulary acquisition in diverse educational contexts. Further research is warranted to validate and expand upon these findings, particularly in the primary education setting. Investigating the long-term effects and exploring instructional strategies to promote the adoption of the Loci Method among teachers would be valuable for optimizing vocabulary learning outcomes among young learners.

In conclusion, this study provides convincing evidence that the Loci approach positively affects vocabulary memory and recall skills in third graders. The results highlight the potential of this mnemonic strategy to improve vocabulary learning for EFL learners. By combining visual aids and spatial associations, educators can simplify vocabulary instruction and enhance students' overall language acquisition. Further research in this area will contribute to the advancement of effective teaching methods and teaching methods in the field of vocabulary learning.

3.8 Limitations

It is important to acknowledge the limitations of this study. The generalizability of the findings may be limited to the specific context and sample used. Additionally, the study primarily focused on short-term outcomes, and further research is needed to explore the long-term effects and generalizability of the method of loci across diverse populations and educational settings. Future studies could also delve into optimal implementation strategies, potential variations of the method for different age groups, and subject areas.

Conclusion

In conclusion, the field work chapter of this dissertation has successfully implemented a mixed methods approach, combining descriptive and experimental

designs, to investigate the impact of the method of loci on vocabulary memorization and recall skills among 3rd-year pupils at Saad Chikouche Primary School. The findings have provided valuable insights into the effectiveness of this mnemonic technique in enhancing EFL learners' vocabulary learning.

Through the rigorous implementation of pre-tests, post-tests, and the administration of questionnaires to primary school English teachers, a comprehensive understanding of the effects of the method of loci has been achieved. The experimental group, instructed using the method of loci, exhibited significant improvements in vocabulary scores compared to the control group, which was taught through traditional methods. This indicates that the use of visual and spatial associations facilitated better encoding, retention, and retrieval of vocabulary items, leading to enhanced vocabulary memorization and recall.

The successful implementation of the research design and data collection procedures ensured the validity and reliability of the findings. Steps were taken to ensure the accuracy of data through proper sampling techniques, rigorous testing protocols, and thorough analysis. The mixed methods approach allowed for a comprehensive exploration of the research questions, combining quantitative and qualitative data to provide a holistic understanding of the impact of the method of loci.

The questionnaire findings revealed that although there was moderate awareness of the Loci Method among teachers, with 50% indicating prior knowledge, its utilization was relatively low, with only 30% of teachers incorporating it into their instruction. This highlights the potential untapped benefits of the Loci Method in

assisting students' vocabulary learning, as supported by the positive feedback from 40% of the surveyed teachers who reported its efficacy.

Furthermore, the test and pre-test results provided concrete evidence of the positive impact of implementing the Loci Method on students' acquired vocabulary. The significant increase in mean acquired vocabulary scores from 1.55 in the pre-test to 9.05 in the post-test for the experimental group, along with a smaller standard deviation, clearly demonstrates the effectiveness of the Loci Method in enhancing vocabulary acquisition. The statistical analysis, specifically the T-test value of 28.97 at a significance level of 0.05 (α), reinforces the robustness of these findings and underscores the significant improvement in vocabulary skills among the experimental group. These findings hold important implications for educators and curriculum developers, highlighting the potential of mnemonic techniques, such as the Loci Method, in enhancing vocabulary instruction.

The results underscore the need to raise awareness among teachers and provide appropriate training and resources to promote the effective utilization of memory-enhancing strategies in the classroom. By leveraging the benefits of the Loci Method, teachers can facilitate students' vocabulary learning, leading to improved memorization and recall skills. It is important to acknowledge the limitations of this study. The research was conducted within the specific context of SaadChikouche Primary School, limiting the generalizability of the findings to other educational settings and grade levels. Further research is warranted to explore the validity and applicability of the Loci Method in diverse populations and educational contexts.

In summary, this field work chapter contributes to the existing literature on vocabulary instruction by providing comprehensive insights into the awareness,

utilization, and efficacy of the method of loci. The positive outcomes observed in the students' acquired vocabulary scores affirm the effectiveness of incorporating mnemonic techniques into classroom practices. These findings offer valuable implications for educators seeking innovative strategies to enhance vocabulary learning and promote improved memorization and recall skills among students. The research sets the stage for future investigations in the field, ultimately advancing effective teaching methodologies and pedagogical practices in the realm of vocabulary instruction.

In conclusion, this field work chapter sets the foundation for the subsequent chapters of this dissertation, offering a comprehensive analysis of the impact of the method of loci on vocabulary learning. The findings contribute to the existing body of knowledge in the field and provide practical recommendations for educators to enhance vocabulary instruction and improve language acquisition among EFL learners.

General Conclusion

General Conclusion

The current study examined the impact of the method of loci on the memorization and recall skills of third-grade students at SaadChikouche Primary School. Through the administration of a questionnaire to primary English teachers and pre- and post-tests to the experimental and control groups, the study yielded valuable insights into the effectiveness of mnemonic techniques in vocabulary instruction.

The questionnaire findings highlighted a significant divide among teachers regarding their awareness and utilization of the Loci Method. While 50% of the surveyed teachers had heard of the method, only 30% had incorporated it into their teaching practices. This indicates the need for comprehensive professional development programs and collaborative platforms that facilitate knowledge sharing among educators. By equipping teachers with the necessary skills and creating opportunities for collaboration, educational institutions can promote the adoption of mnemonic strategies and enhance vocabulary instruction.

The test and post-test results provided compelling evidence for the effectiveness of the method of loci in enhancing vocabulary acquisition. The experimental group demonstrated a remarkable improvement in their acquired vocabulary scores from the pre-test (mean = 1.55) to the post-test (mean = 9.05). The statistical analysis further confirmed the significance of this improvement. As a result, H₀ was rejected and H₁ was accepted. As a result, we can claim that using the Loci method is a supportive and fruitful technique to enhance

The pedagogical implications derived from this study suggest several strategies to optimize vocabulary instruction. First, professional development programs should be implemented to familiarize teachers with mnemonic techniques and empower them to integrate these strategies into their curriculum. Second, curriculum designers should consider incorporating mnemonic techniques as an integral part of vocabulary instruction materials.

Lastly, fostering teacher collaboration and knowledge sharing can bridge the gap between teachers who are familiar with the Loci Method and those who are not, fostering a culture of innovation and continuous improvement.

Furthermore, suggestions for further research have been identified to advance the field of vocabulary instruction. Future studies should explore the long-term effects of mnemonic techniques, conduct comparative analyses between different mnemonic strategies, examine the generalizability of findings across different educational settings and grade levels, incorporate student perspectives through qualitative research methods, and investigate the effectiveness of mnemonic techniques in subjects beyond language learning.

In conclusion, by considering these pedagogical implications and conducting further research, educators and researchers can refine instructional practices, enrich curriculum design, and promote optimal learning outcomes. Ultimately, the findings of this dissertation contribute to the body of knowledge in vocabulary instruction, providing valuable insights into the efficacy of mnemonic strategies in enhancing memorization and recall skills.

Pedagogical Implications and Suggestions for Further Researches

Implications of the Study

The findings of this study have several pedagogical implications that can inform teaching practices and curriculum development in the context of vocabulary instruction. These implications are as follows:

- **Professional Development:**

The results highlight the need for comprehensive professional development programs targeting teachers' knowledge and skills in utilizing mnemonic techniques, such as the method

of loci. Workshops, training sessions, and ongoing support can equip teachers with the necessary tools to effectively incorporate these strategies into their vocabulary instruction, thereby enhancing students' memorization and recall skills.

- **Curriculum Design:**

Curriculum developers should consider integrating mnemonic techniques as an essential component of vocabulary instruction. By embedding methods like the Loci Method into curriculum materials and lesson plans, educators can create a more engaging and effective learning environment that promotes improved vocabulary acquisition and retention.

- **Teacher Collaboration:**

The study reveals a significant disparity in teachers' awareness and utilization of the Loci Method. Encouraging collaboration and knowledge sharing among teachers can bridge this gap. Establishing platforms for experienced teachers to provide guidance and support to their colleagues would foster a culture of innovation and continuous improvement within the teaching community.

Suggestions for Further Researches

While this study contributes valuable insights to the field of vocabulary instruction, there are avenues for further research that can deepen our understanding and expand upon the current findings. The following suggestions are offered for future investigations:

- **Long-Term Effects:**

This study primarily focused on the short-term impact of the method of loci on vocabulary acquisition. Future research should explore the long-term effects of employing mnemonic techniques by tracking students' progress over an extended period. This longitudinal approach

would provide valuable insights into the sustainability and durability of the mnemonic approach in enhancing memorization and recall skills.

- **Comparative Studies:**

Conducting comparative studies between different mnemonic techniques would enable a more nuanced understanding of their relative effectiveness. Comparisons between the method of loci and other mnemonic strategies, or the combination of multiple techniques, could help identify the most efficient approaches for improving vocabulary learning outcomes.

- **Generalizability:**

It is important to acknowledge that this research was conducted within a specific context and with a limited sample size. To enhance the generalizability of the findings, future studies should aim to replicate the investigation in different educational settings and with larger sample sizes.

- **Student Perspectives:**

While the current study primarily focused on teacher perspectives and test scores, incorporating student feedback and perceptions would provide a more comprehensive understanding of the impact of mnemonic techniques. Qualitative research methods, such as interviews or focus groups, could be employed to explore students' experiences and attitudes toward using mnemonic strategies for vocabulary learning.

- **Other Grade Levels and Subjects:**

Extending the investigation to different grade levels and subjects would broaden our understanding of the applicability and effectiveness of mnemonic techniques. Exploring the

use of mnemonic strategies in subjects beyond language learning, such as mathematics or science, could shed light on their potential in diverse academic domains

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Appendices

Appendix I: Pre-Test Vocabulary Assesment

Task1:look and match

1.Sweets



2.Happy



3.Knife



4.Cake



5.Juice



6.Plate



7.Sad



8.Candle



9.Gift




10.Spoon





Appendix II: Pre-Test Vocabulary Assessment Answers


Appendix :Pre-Test


Task1:Look and match


1. Sweets → 


2. Happy → 


3. Knife → 


4. Cake → 


5. Juice → 

6. Plate → 

7. Sad → 

8. Candle → 

9. Gift → 

10. Spoon → 

Appendix III: Post Test Assessment

Task01: Match the word with the corresponding picture

1. Plate



2. Juice



3. Sweets



4. Gift



5. Sad



6 Knife



7. Candle



8. Happy



9. Spoon



10. Cake



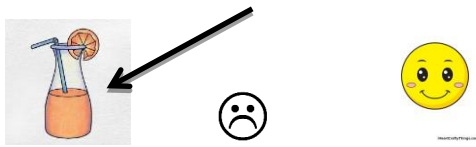
Appendix IV: Answers of the Post Test

Task01: Match the word with the corresponding picture

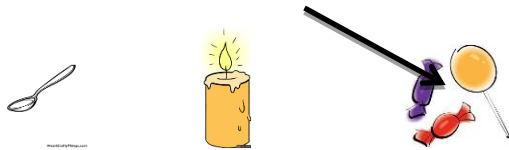
1. Plate



2. Juice



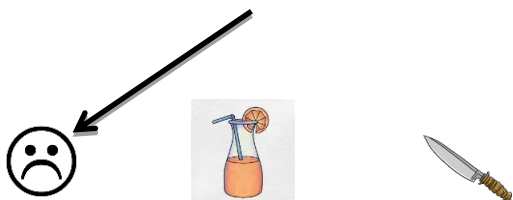
3. Sweets



4. Gift



5. Sad



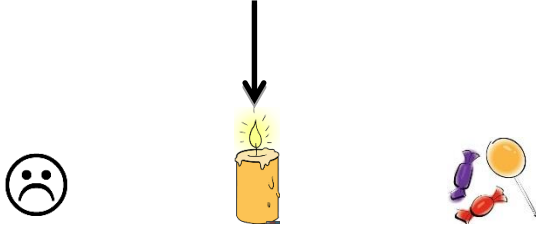
6

knife

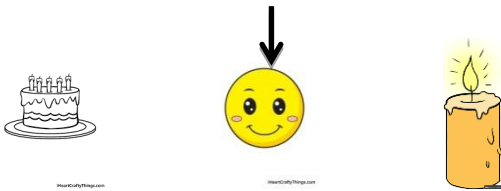


7.

candle



8. happy



9.spoon



10.

cake



Appendix V: Teachers Questionnaire

This questionnaire is designed to gather teachers' perceptions on the use of the loci method (also known as the memory palace technique) for learners' vocabulary memorization. By gathering teachers' perceptions on the use of the loci method in vocabulary memorization, we hope to better understand the effectiveness of this technique in the classroom setting. Your feedback is valuable in helping to improve vocabulary teaching and learning strategies.

1. Have you ever heard of the loci method (also known as the memory palace technique) for memorizing vocabulary?

a. Yes

b. No

2. Have you ever used the loci method yourself to memorize vocabulary?

a. Yes

b. No

3. Have you ever taught the loci method to your pupils to help them memorize vocabulary?

a. Yes

b. No

4. If you have taught the loci method to your pupils , what were the results?

a. The majority of pupils found it helpful

b. A few pupils found it helpful, but most did not

c. The majority of pupils did not find it helpful

d. I have not taught the loci method to my pupils

5. How do you think the loci method compared to other vocabulary memorization techniques?

a. It is more effective

b. It is about as effective as other techniques

c. It is less effective

6. What are the benefits of using the loci method for vocabulary memorization, in your opinion?

.....
.....

7. What are the challenges or limitations of using the loci method for vocabulary memorization, in your opinion?

.....
.....

8. Would you recommend the loci method to other teachers for teaching vocabulary?

a. Yes

b. No

9. If you would recommend the loci method to other teachers, what advice would you give them for implementing it effectively in the classroom?

.....

Thank you for taking the time to complete this questionnaire!

Appendix VI: List of SPSS References

PairedSamplesStatistics					
		Mean	N	Std. Deviation	Std. ErrorMean
Pair 1	Post test marks	9.0556	18	.87260	.20567
	Pre test marks	1.5556	18	1.09664	.25848

PairedSamplesCorrelations				
		N	Correlation	Sig.
Pair 1	Post test marks &Pre test marks	18	.396	.104

PairedSamples Test									
		PairedDifferences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. ErrorMean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Post test marks - Pre test marks	7.50000	1.09813	.25883	6.95391	8.04609	28.97617		.000

PairedSamplesStatistics					
		Mean	N	Std. Deviation	Std. ErrorMean
Pair 1	Post test marks	2.1111	18	1.84355	.43453
	Pre test marks	1.5000	18	.98518	.23221

PairedSamplesCorrelations				
		N	Correlation	Sig.
Pair 1	Post test marks &Pre test marks	18	.777	.000

PairedSamples Test									
		PairedDifferences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
Pair					Lower	Upper			
1	Post test marks - Pre test marks	.61111	1.24328	.29304	-.00716	1.22938	2.08517		.052

المخلص

تلعب الذاكرة دورًا مهمًا في عملية التعلم، لا سيما في اكتساب المفردات. تركز هذه الدراسة على التحقيق في فعالية طريقة (Locis) كأسلوب ذاكري لتحسين حفظ المفردات واسترجاعها لدى تلاميذ الصف الثالث الابتدائي. بالاعتماد على البحث التجريبي، تم استخدام نهج متعدد الأساليب. تم إرسال استبيان إلى عشرة من معلمي المدارس الابتدائية لجمع أفكار حول الممارسات والتصورات الحالية فيما يتعلق بتعليم المفردات. بالإضافة إلى ذلك، تم إجراء اختبارين تمهيدي مع 18 تلميذاً في كل فصل دراسي من الصف الثالث، وقياس حفظ المفردات الخاصة بهم وقدرات الاسترجاع قبل وبعد تنفيذ طريقة Locis. الهدف الرئيسي من هذه الرسالة هو تقييم تأثير طريقة (Locis) على نتائج تعلم المفردات في تلاميذ الصف الثالث. من خلال دراسة فاعلية تقنية الذاكرة، يمكن تحديد الآثار العملية لتعزيز تعليم المفردات في المدارس الابتدائية. كشفت النتائج عن تحسينات كبيرة في كل من حفظ المفردات واسترجاعها. يؤدي تطبيق طريقة (Locis) إلى تعزيز كبير في قدرة المتعلمين على حفظ الكلمات المفردات، كما يتضح من الزيادة الملحوظة في درجات ما بعد الاختبار مقارنةً بنتائج الاختبار السابق بغض النظر عن مستويات الكفاءة الأولية للتلاميذ، مما يشير إلى أن تقنية MOL كانت فعالة للمتعلمين المتنوعين. هذه النتائج لها آثار عملية للمعلمين، حيث تسلط الضوء على فوائد دمج تقنيات الذاكرة، وتحديدًا طريقة (Locis) في تعليم المفردات للمتعلمين الصغار.

الكلمات المفتاحية: المدرسة الابتدائية للصف الثالث، متعلمون متنوعون، تحسين التعلم، تقنيات الذاكرة، طريقة المحاور، تعليم المفردات، حفظ المفردات، استدعاء المفردات.

Résumé

Cette étude se concentre sur l'investigation de l'efficacité de la méthode des lieux comme technique mnémotechnique pour améliorer la mémorisation et le rappel du vocabulaire chez les apprenants de 3^{em} année du primaire. S'appuyant sur des recherches empiriques, une approche à méthodes mixtes a été employée. Un questionnaire a été administré à dix enseignants du primaire pour recueillir des informations sur les pratiques et les perceptions actuelles concernant l'enseignement du vocabulaire. De plus, un test et un pré-test ont été menés auprès de 18 élèves de chaque classe de 3^e année, mesurant leurs capacités de mémorisation et de rappel du vocabulaire avant et après la mise en œuvre de la méthode Loci. L'objectif principal de cette thèse est d'évaluer l'impact de la méthode Loci sur les résultats d'apprentissage du vocabulaire chez les élèves de 3^e année. En examinant l'efficacité de cette technique mnémotechnique, des implications pratiques pour améliorer l'enseignement du vocabulaire dans les écoles primaires peuvent être identifiées. Les résultats ont révélé des améliorations significatives à la fois dans la mémorisation du vocabulaire et dans le rappel. La mise en œuvre de la méthode de Loci a conduit à une amélioration substantielle de la capacité des apprenants à mémoriser des mots de vocabulaire, comme en témoigne une augmentation notable des scores post-test par rapport aux scores pré-test, quel que soit le niveau de compétence initial des élèves, ce qui suggère que la technique MOL était efficace pour divers apprenants. Ces résultats ont des implications pratiques pour les éducateurs, soulignant les avantages de l'incorporation de techniques mnémoniques, en particulier la méthode des Loci, dans l'enseignement du vocabulaire pour les jeunes apprenants.

Mots-clés: École primaire de 3^{em} année, Apprenants divers, Approfondissement des apprentissages, Techniques mnémoniques, Méthode des lieux, Enseignement du vocabulaire, Mémorisation du vocabulaire, Rappel du vocabulaire.