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The American University in Cairo  
School of Humanities and Social Sciences

**AFL Students' Perception of Using Mnemonics as a Strategy to  
Enhance their Vocabulary Acquisition and Retention**

A thesis submitted to  
The Department of Applied Linguistics  
In Partial Fulfillment of the Requirements for  
The Degree of Master of Arts in  
Teaching Arabic as a Foreign Language

**By Elsayed Elsis**

Under the supervision of  
Dr. Raghda El Essawi

September 2023

## **ABSTRACT**

Research in the field of language teaching and learning reveals that mnemonics is one of the most effective language learning strategies for vocabulary. Researchers like Rasiban, et al. (2019); Levin (1993); Zulfa (2019); Kayaaltu (2018) suggest that using mnemonics to learn new vocabulary has a positive effect on vocabulary retention and retrieval. Research also shows however that students' perceptions may encourage or inhibit the usage of any learning strategy depending on their perceptions of its effectiveness. Hence the importance of detecting learner perception about any learning or teaching device. Despite the above there is limited research about students' perceptions about mnemonics as a language learning practice. In this study researcher attempts to look into student perceptions about effectiveness of using mnemonics for learning new vocabulary and mnemonic strategies that students prefer. Analysis of data also revealed challenges that students face when using mnemonics. Study results indicate that students perceive mnemonics as a useful tool for helping them remember and retrieve new vocabulary. They also consider it as a fun-infusing activity that has a positive effect on learning environment by encouraging creativeness and improvisation, cooperative learning, and helps personalization of their learning. Study also shows that challenges which some students face when using mnemonics may in fact result from problems in using that strategy rather than the strategy itself. Furthermore, study results indicate that students' most preferred types of mnemonics are verbal and keyword. Students however indicated that learners should be given the freedom to choose mnemonic strategies that best suite required learning tasks and their learning style.

*Keywords:* teaching Arabic as a foreign language, learning strategies, vocabulary learning strategies, vocabulary learning, foreign language learning, mnemonics,

**To**  
***My Beloved Parents***

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الحمد لله. "وَأَتَاكُمْ مِنْ كُلِّ مَا سَأَلْتُمُوهُ وَإِنْ تَعْدُوا نِعْمَةَ اللَّهِ لَا تُحْصُوهَا".

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## **List of Abbreviations**

AFL: Arabic as a Foreign Language

LLS: Language Learning Strategies

VLS: Vocabulary Learning Strategies

SLA: Second Language Acquisition

SLVA: Second Language Vocabulary Acquisition

## List of Symbols

These symbols are based on the International Phonetic Alphabet (IPA), Ahmed Mukhtar Omar's list of Arabic speech sounds (1997).

**NOTE:** the transcription of utterances is based on the Arabic variety phonological system. If the utterance is written in Modern standard Arabic (MSA), utterance is transcribed following MSA phonological system.

### *Arabic short vowel symbols*

Arabic sound	MSA Symbol	Example	Translation	Sound Description
ـَ	a	as in 'ḥarb'	War	Low/open and front
ـُ	u	as in 'ḥurb'	Drinking	High/close and back
ـِ	i	as in 'qird'	Monkey	High/close and front

*Note.* From *An Analysis of Speech Acts in Egyptian Billboard Advertising*, by Abdelkareem, W. (2023). *Theses and Dissertations*. <https://fount.aucegypt.edu/etds/2056>

### *Arabic long vowel symbols*

Arabic sound	MSA Symbol	Example	Translation
ا	a:	as in 'Za:ra'	he visited
و	u:	as in 'ṣu:ra'	picture
ي	i:	as in 'mari:d'	Sick

*Note.* From *An Analysis of Speech Acts in Egyptian Billboard Advertising*, by Abdelkareem, W. (2023). *Theses and Dissertations*. <https://fount.aucegypt.edu/etds/2056>

*Arabic semi-vowels are*

Arabic sound	MSA Symbol	Example	Translation	Sound Description
ء	ʔ	as in ‘ʔakl’	food	Glottal stop
ح	ħ	as in ‘ħarb’	war	a pharyngeal voiceless fricative
خ	x	as in ‘xabi:r’	expert	a voiceless fricative
ر	r	as in ‘raħal’	he left	a trill
ص	ʂ	as in ‘ʂawt’	voice	a velarized (as in ‘sun’*)
ض	ɖ	as in ‘ɖami:r’	conscious	a velarized (as in ‘done’*)
ط	ɟ	as in ‘ɟabla’	drum	a velarized (as in ‘tough’*)
ظ	ʕ	as in ‘ʕarf’	envelope	a velarized (as in ‘Zaar’*)
ع	ʕ	as in ‘ʕamd’	deliberate	a pharyngeal voiced fricative
غ	ɣ	as in ‘ɣani’	rich	a voiced fricative
ق	q	‘qanu:n’	law	a uvular voiceless plosive

*Note.* From *An Analysis of Speech Acts in Egyptian Billboard Advertising*, by Abdelkareem, W. (2023). *Theses and Dissertations*. <https://fount.aucegypt.edu/etds/2056>

#### *Arabic consonant symbols specific to Arabic*

Arabic sound	MSA Symbol	Example	Translation
و	W	as in ‘waadi’	valley
ي	J	as in ‘jawm’	day

*Note.* From *An Analysis of Speech Acts in Egyptian Billboard Advertising*, by Abdelkareem, W. (2023). *Theses and Dissertations*. <https://fount.aucegypt.edu/etds/2056>

#### *Arabic consonants shared with English*

Arabic sound	MSA Symbol	Example	Translation
ب	b	ba:b	door
ت	t	bajt	house
ث	θ	θaʃlab	fox
ج	dʒ	dʒamal	camel
د	d	doktoor	doctor
ذ	ð	‘ðakar’	male
ز	z	‘zama:n’	long ago
س	s	‘sabab’	reason
ش	ʃ	‘ʃama:l’	north
ف	f	‘fari:d’	unique
ل	l	‘la’	no
م	m	‘min’	from
ن	n	‘na:dir’	rare
ك	k	‘kita:b’	book
هـ	h	‘haram’	pyramid
چ	ʒ	‘Gana’	A girl proper name
ف	v	‘vanillja’	vanilla

*Note.* From *An Analysis of Speech Acts in Egyptian Billboard Advertising*, by Abdelkareem, W.

(2023). *Theses and Dissertations*. <https://fount.aucegypt.edu/etds/2056>

## **CHAPTER 1: INTRODUCTION**

### **Background and Context**

Vocabulary is an essential part of learning a foreign or second language (L2). It has a huge influence on the student's ability to communicate competently (Alahmadi & Foltz, 2020). Also, learning vocabulary has a positive impact on a student's ability to grasp the four different language skills, which are listening, reading, speaking, and writing (Alqarni & Ibrahim, 2018). If students do not master a reasonable pool of vocabulary, they struggle as they use the different skills of the target language (Pisal et al., 2022). Many studies affirmed that having limited Arabic vocabulary negatively affects both the students' language level (Yusof et al., 2021) and their future language achievement (Baharudin & Ismail, 2014).

A lack of vocabulary leads students to struggle in communicating either verbally or in writing and they encounter difficulties in comprehending the new language (Sari, 2018). Effective communication relies heavily on the knowledge of vocabulary.

Despite its importance, learning vocabulary is a major challenge that both teachers and students need to address when teaching or learning a foreign language. Unfortunately, vocabulary acquisition gets limited attention and time within most L2 classrooms when compared to other aspects of foreign language learning such as grammar or phonology (Mohamed, 2015). Furthermore, L2 researchers do not focus much on vocabulary acquisition in spite of its importance and impact on foreign language learning and effective communication (Alahmadi & Foltz, 2020). These are significant hurdles especially in light of the fact that recent approaches to teaching foreign languages aim to utilize the target language in communication inside and outside of the classroom. All the above makes it clear that there is a need to involve second

language vocabulary acquisition (SLVA) strategies so that students can excel in the language and use it in and out of the classroom more effectively (Brosh, 2019).

The mentioned challenges become even more challenging when it comes to learning languages from families that are different from the language family student speaks. For instance, an L2 learner who speaks Indo-European languages and learning a Semitic language, Arabic, which is not from the Indo-European family of languages. In such instances, students do not only face challenges with vocabulary but also with the orthography, and most aspects of the language system which greatly differs from first languages (L1) (Dajani et al., 2014). In such cases, adopting appropriate practices in addressing the challenges in vocabulary acquisition becomes more vital.

One of the useful pedagogical practices that has had a positive effect on students' learning is developing their awareness of the various language learning strategies. The importance of such an awareness became especially clear during the last few decades due to the increased focus on student-centered learning and the role of students in enhancing their own learning process. Schmitt & Meara, (1997) noted that the change in the learner role in the modern classroom, from a passive to an active one, has maximized interest in students' learning experience. Students' independence is today central to the learning process because an independent learner will play a more active role in enhancing their own process of learning. Once students are familiar with effective learning procedures or strategies, they become more capable of making their learning process easier, more flexible, impactful, and self-oriented (Ansarin et al., 2012). The positive effect of students' awareness of such strategies or procedures on improving language learning has been emphasized by a wide body of research (Brosh, 2019).



## **The Role of Language Learning Strategies (LLS) in Enhancing Learning**

Language learning strategies (LLS) are crucial because, as mentioned earlier, they help overcome the challenges of L2 learning, facilitate it, and enhance the learning experience. Oxford's (2017) stance affirms the importance of the learner's flexibility to choose what works best for them therefore enhancing learners' autonomy and fulfilling principles of active learning (as cited in Brosh, 2019). Accordingly, LLS are expected to help learners get over the language learning hurdles related to acquiring any aspect of a foreign language including vocabulary. In recent years, researchers have defined LLS in different ways, the most noteworthy being Oxford's (2017) definition which regarded learning strategies as a certain group of actions, practices, and attitudes that activate the use of a foreign language. LLS are also defined as a chain of behaviors and actions the learners use to facilitate their language-learning process (Amiryousefi, 2015). With knowledge of these learning strategies learners can decide which practices work best for them to facilitate their language learning process, and thus making them more autonomous and self-driven. Finally, learning strategies have a positive effect on the students' learning because they increase their ability to handle new information and their overall motivation about learning the language. As a result, these practices make learning more effective once the learner is trained to utilize them (Brosh, 2019).

In the case of Arabic as a foreign language, Baharudin and Ismail (2014) stated that it is essential to use certain learning strategies to facilitate Arabic as a foreign language (AFL) student's performance and vocabulary acquisition (Baharudin & Ismail, 2014; Pisal et al., 2022). Siriganjanavong (2013) also found that these strategies not only help students strengthen their approach to unknown vocabulary, but also encourage students to study and learn independently.

Moreover, according to Cohen (1987), there are three types of learning strategies: (1) Skill-area-based strategies which center on the four language skills (listening, speaking, reading, and writing); (2) language use and learning strategies; and (3) function-based strategies which are social, affective, cognitive, and metacognitive ways students choose their way of realizing, reflecting, and analyzing information (Chamot, 1987). Cognitive learning strategies are a specific group of behaviors or processes that include certain activities such as translation, notetaking, recapping, replacement, reiteration, reciting, and memorizing. Students use those sets of behaviors to perceive information, organize and retain it (Grenfell & Harris, 2017). On the other hand, metacognitive learning strategies involve activities that are related to students' responsibility for their learning, such as observing, evaluating, and reflecting. Students' (cognitive) learning activities depend on their reasoning, judging, and planning (Brosh, 2019). The skill of managing self-learning is a significant skill to have as a student. This is because, within self-learning, students get to decide what they learn rather than learning information that is decided by the teacher (Pashler et al., 2008). Furthermore, according to students' learning styles, students with high metalinguistic awareness choose learning strategies that work best for them (R. Oxford, 2003; Scarcella & Oxford, 1992). Some students prefer attaching newly learned information with pictures or sounds, while others prefer taking notes and others favor grammatical clarifications. These differences in learning preference are due to the different ways in which students analyze new data and process information (Weaver & Cohen, 1994). Students can also decide to use multiple strategies and use them at different steps of their language acquisition journey.

## **The Role of Vocabulary Learning Strategies in Enhancing Vocabulary Learning and Acquisition**

Awareness of the vocabulary learning strategies (VLS) by researchers, students, or teachers can help in many ways. Firstly, they can help unsuccessful language learners and encourage them to use proven effective strategies used by their competent peers. Consequently, this will help those students to excel in their language learning (Brown, 2015). Secondly, educators and researchers will learn about, and therefore introduce in their classes, the best strategies learners use during their vocabulary learning process (whether those strategies were social, or cognitive or metacognitive). Such an awareness, thus, benefits all involved in process of teaching and learning through highlighting effective ways of learning vocabulary (Chamot, 2001). Thirdly, it's crucial to consider that language learners' strategy preferences can vary significantly due to differences in their educational, linguistic, and cultural backgrounds. Therefore, instructors can make informed decisions about which strategies to teach or prioritize when they have a comprehensive understanding of these strategies and how students perceive them. This awareness allows educators to tailor their teaching methods to better meet the diverse needs and preferences of their students. (Schmitt, 2000). This in turn can positively affect students' learning motivation which is at the very core of successful language learning. Lastly, when students are trained to use a certain VLS, they could be self-learned as they will be aware of what works best for them and what doesn't. Accordingly, both students and teachers will save effort and time by knowing the most effective VLSs (Brown, 2014 as cited in Amiryousefi, 2015). In the field of teaching Arabic as foreign language Baharudin & Ismail, (2014) stated in their study that VLS have a strong and lasting effect on AFL students' vocabulary acquisition, retention, and size.

The vocabulary learning and teaching literature contains classifications and taxonomies of VLS such as Rubin and Thompson's which includes, direct approach, indirect approach, and mnemonics. The direct approach focuses on the direct and classical way of learning by paying attention to the vocabulary itself. This indicates the direct focus of the learner on learning the vocabulary through taking notes, saying the words, writing them a few times, and using flashcards. On the other hand, the indirect approach affirms going beyond the text by focusing on the learning task by reading and analyzing that text. Finally, mnemonics, which includes associating vocabularies with a text or a picture to facilitate recalling and retaining them in their memory (Amiryousefi, 2015). As this thesis primarily focuses on mnemonics, a more detailed exploration of this indirect approach is presented below.

### **The Role of Mnemonics in Enhancing Vocabulary Learning and Acquisition and Helping Learners**

Mnemonics or in other words memory strategies involve associating new learned vocabulary with a previous knowledge. This happens using a diverse set of methods either verbal or imagery. Cognitive strategies do not focus on manipulative mental processing, and they resemble memory strategies (Mnemonic strategies share similarities with cognitive strategies but do not primarily involve intricate mental manipulation) (Heidari et al., 2012). For cognitive strategies include classical and mechanical means such as using flashcards, taking notes and making vocabulary lists or less classical ones like mnemonics. Mnemonics is an effective and very popular vocabulary learning instrument which helps in vocabulary immediate recall using associates. A learner is able to retrieve new vocabulary after learning them as the associate is still fresh and easy to recall. By time and through repetition, that new vocabulary moves from their

short-term memory to their long-term one. Students might be given the connection or link word, or they could come up with it themselves. Either way, it doesn't reflect on the effectiveness of recalling. The process of coming up with a word is not always an easy task. Mnemonics which only focus on the form of the word are less to be remembered than others which focus on related information especially if it was funny, weird, or uncommon information. The Mnemonics are random, and the links used are sometimes logical and some other times are not at all. This depends on the learners' knowledge and their ability to come up with that connection such as knowing a certain language and being exposed to different environments and experiences (Anari et al., 2014).

Mnemonics as a method has been used by the researcher in actual classroom setting though the results driven from that experience should be taken in consideration with care because those situations were not experimental. Using it in practice might be tiring and complicated sometimes. For example, AFL students can't use mnemonics with all vocabularies because they can't find the link or the connection whether it was verbal or visual. In addition, they could learn a single word meaning using mnemonics and easily recall the word later. However, they may remember the word but with the wrong pronunciation (Avila & Sadoski, 1996). Moreover, students might choose one meaning to use and neglect the other meanings of the word. Also, the link they choose might be random and proven to be less successful based on whether it provided a recovery path of the foreign language word meaning or to the word itself. There are a few issues of debate about foreign language word recall or its meaning. Firstly, triggering the link between the word and its corresponding meaning. Secondly, there is the issue of applying the word in real-life situations, effectively integrating it into practical language use. Thirdly, prior awareness of the word and finally, the needed stop point of mnemonics associates (Cohen, 1987). However, mnemonics could

be very effective if it was used selectively and wisely as an effective strategy which students can use to acquire and retain the new vocabulary they learn.

### **Importance of Knowing Students' Perception About Classroom Practices in General and About Mnemonics in Specific**

Students' beliefs are of great importance in education and have drawn a lot of attention across the years. This is because it reflects on students' achievement academically as well as personally within their self-belief or self-efficacy. Success of a certain instructional method or technique depends on students and teachers' perception of them. As Amiryousefi, (2015) puts it "teachers' and students' behavior, functioning, and learning are controlled by their thoughts, beliefs, attitudes, and perceptions" (p.1). That being said, analyzing students' opinion about using mnemonics to learn vocabulary will be valuable in revealing whether students perceive such a technique as effective to use for memorizing and retaining vocabulary or not. This, in turn, is expected to reflect on whether it is recommended for teachers and curriculum developers to target training students to use this learning strategy.

In this thesis, the researcher will focus on inspecting Arabic as a foreign language students' perception about using mnemonics as a form of VLS that target helping learners to acquire and retain new vocabulary. Specifically, it tries to discover AFL students' perception about the significance and accordingly the effectiveness of using mnemonics as a VLS that could be employed to facilitate AFL learning. Mnemonics in this context is either a word or a syllable that students already know which acts as a mediator between what they know and what needs to be learned. The link word could be from students' native language or any other language they know (Cohen, 1987). Although there was much research regarding the effectiveness of mnemonics as

a strategy for learning and retaining new vocabulary (Alqarni & Ibrahim, 2018). Levin (1993), Rasiban, Sudana and Sutedi (2019), and Zulfa (2019), have indicated that no research has been done about students' perceptions towards that strategy for learning Arabic.

### **Significance of the Study**

This research will be a good addition to the AFL field. It will open doors for new approaches to address issues related to vocabulary learning and retrieval and students' perspectives about them. Study findings will be a great source of information to AFL instructors, AFL course developers and designers along with AFL learners. Thus, it could be a guide for vocabulary teaching, learning, and planning (Alqarni & Ibrahim, 2018). In addition, the study increases awareness of the significance of using learning strategies in general and a specific strategy namely mnemonics in learning new vocabulary through inspecting students' perceptions of its effectiveness. The researcher's ultimate goal is raising awareness about mnemonics as a vocabulary learning strategy, and to motivate and encourage both students and teachers to use them in their journey of learning and teaching Arabic as the researcher himself did when learning Korean.

This research holds the potential to significantly contribute to the field of AFL as it offers a fresh perspective on addressing challenges related to vocabulary acquisition and retention, while also delving into students' viewpoints on these aspects. The insights gained from this study will prove invaluable to AFL instructors, curriculum developers, and learners alike. Consequently, the findings may serve as a guiding resource for vocabulary teaching, learning, and curriculum planning within the AFL domain (Alqarni & Ibrahim, 2018). Furthermore, this research extends the conversation surrounding the importance of employing effective learning

strategies, with a particular focus on mnemonics, in the context of vocabulary acquisition. By examining students' perceptions of the effectiveness of mnemonics, this study contributes to raising awareness about the significance of such strategies in the realm of education. Ultimately, the researcher's overarching goal is to inspire and motivate both students and teachers to embrace mnemonics as a valuable tool in their journey of learning and teaching Arabic, drawing from personal experiences akin to the researcher's own dedication when learning Korean.

## **Research Gap**

Because of the importance of learning strategies in learning vocabulary of a new language, several studies of vocabulary learning strategies have been conducted. However, the majority of VLS studies were conducted about languages other than Arabic specifically English. Beside studies about learning strategies in general, a number of studies have been carried out to investigate the effectiveness of mnemonics in commonly taught languages like English. A few of those studies have been conducted to assess students' perceptions about using mnemonics to study English vocabulary (for example Amiryousefi, 2015). However, within the researcher knowledge none were conducted about student perceptions of using mnemonics when learning vocabulary in Arabic to improve its acquisition and retention, particularly in the learning of Arabic as a second language literature.

Given the paramount significance of mnemonics in vocabulary acquisition of a new language, numerous studies have been dedicated to exploring vocabulary learning strategies (VLS). However, it's worth noting that the majority of VLS studies have primarily focused on languages other than Arabic, with English being a prominent subject of investigation. While research pertaining to learning strategies in general has been conducted, specific studies assessing



the efficacy of mnemonics have predominantly centred around widely taught languages like English. To illustrate, there exist some inquiries into students' perceptions regarding the utilization of mnemonics for studying English vocabulary, as exemplified by Amiryousefi's work in 2015. Nevertheless, within the scope of the researcher's knowledge, there appears to be a noticeable gap in the literature in relation to other languages like Arabic. Specifically, there is a paucity of research that investigates students' perspectives regarding the use of mnemonics in the context of Arabic vocabulary acquisition and retention. This gap, particularly within the realm of Arabic as a second language, underscores the need for a comprehensive exploration in the second language acquisition domain.

### **Research Questions**

To address this gap in research, the thesis hopes to answer the following questions:

- 1) To what extent do students perceive mnemonic strategies as an effective technique for learning Arabic vocabulary?
- 2) What are students' perceptions about/as to the most useful mnemonic strategies for learning Arabic vocabulary?

### **Delimitations of the Study**

The current study centers on students' perceptions about the use of mnemonics in the classroom. The study will not try to discuss any other LLS beside mnemonics, and it will not discuss the teachers' perceptions. It is also worth noting that judging by the classes students are registered in, all students are in their beginner's level or early intermediate. Thus, results of the study are mainly relevant to those levels of proficiency. The data are collected from a sole

institution which is Leiden university in The Netherlands, however the students' body was diverse and contained students across Europe.

## **DEFINITIONS OF CONSTRUCTS**

### **Theoretical Constructs**

***Learning strategies:*** According to Chamot, (1987), “learning strategies are techniques, approaches or thoughtful actions that students take to the learning and recall both linguistic and content area information.” In other words, strategies are the way or actions that the students have in preparing them for their learning. Moreover, learning strategies are defined as the types of behaviors that learners adopt while learning in order to enhance their process of learning (Wael et al., 2018).

***Vocabulary Learning Strategies (VLS):*** Vocabulary learning strategies can be considered as a part of general learning strategies in second language acquisition. O'Malley and Chamot (1990) describe learning strategies as the specific thoughts or behaviors that learners apply to help them understand, learn, or maintain new information (Ghalebi et al., 2020).

***Mnemonics:*** are techniques or devices, either verbal or visual, which can be utilized to increase a learner's capacity to memorize and recall new information (Siriganjanavong, 2013).

***Students' Perceptions:*** It is students' opinion or viewpoint. In this study it is the extent to which students perceive mnemonic strategies as effective in helping them recall vocabulary (Rasiban et al., 2019).

***Vocabulary Acquisition:*** Students' ability to acquire, recall, use, retrieve, and retain the target words within their short-term and then move it to long memory.

***Operational Definitions:***

***Learning strategies:*** Like Chamot 1987 ( cited in Wael et al., 2018), learning strategies are regarded as a set of actions, and techniques AFL students use to learn Arabic (Wael et al., 2018).

***Vocabulary Learning Strategies (VLS):*** They are certain actions or behaviors AFL students use to help them remember, acquire and retain new Arabic vocabularies (Ghalebi et al., 2020).

***Mnemonics:*** This study relies on a definition of mnemonics presented by Siriganjanavong (2013) that considers mnemonics as techniques which teachers and students use to create links between new vocabulary and old information (whether verbal, visual, audial etc.) students possess to increase their ability to acquire, recall and retain vocabulary.

***Students' Perceptions:*** These are "Learners' feelings and beliefs about their language learning experiences" which could be used to "to review and possibly change their teaching process"(Barkhuizen, 1998, p. 86).

## CHAPTER 2: LITERATURE REVIEW

### Chapter Overview

This chapter presents the theoretical framework of the literature about the current topic namely student perceptions of effectiveness of mnemonics as a vocabulary learning strategy and the types of mnemonic strategies they prefer. The literature review covers the following topics: language learning strategies, vocabulary learning strategies, research on the impact of instruction and utilization of language learning strategies on learning, defining what mnemonics are and their importance, and finally the importance of researching students' perceptions.

### 2.1. Language Learning Strategies (LLS)

#### 2.1.1. *What are Language Learning Strategies (LLS)?*

The word “strategy” dates back to the Greek era where it is derived from the Greek word ‘strategia’ which means recruited steps or actions in battlefields. Fortunately, its meaning has differed in important ways and abandoned its military side and kept its core meaning till the day (Oxford, 2003). The core meaning of ‘strategy’ as defined by the Oxford dictionary “is a plan of action or policy designed to achieve a major or overall aim: time to develop a coherent evacuation strategy.” According to Cohen (1998) the term ‘strategies’ in second language learning is used to refer to steps taken by learners during their manipulation of the second language or in their learning. He mentioned that strategies are categorized into three types, those are, metacognitive learning strategies which refer to planning and organizing student learning. Another type is cognitive learning strategies that utilize memory strategies like mnemonics for vocabulary learning. A third type is performance strategies that encourage learning through repeating what

the learner is supposed to produce. Finally, there are the affective strategies which indicates boosting the learner's confidence to take over a certain learning task by positive self-talk (Cohen, 1998).

The term *learning strategies* refers to certain techniques, steps, behaviors, or actions students use to improve their own learning such as, finding a language partner, or cheering someone on to overcome a learning challenge (Scarcella & Oxford, 1992). Oxford (2003) defines learning strategies as specific thoughts and steps students adopt to improve their foreign language learning. Consequently, the students' ability to learn under a specific teaching or learning context is affected positively by those factors (Oxford, 2003). Through the years, teachers have noted that students use certain strategies in their learning process. They acquired such strategies through their peers or teachers who learned about those ways from their successful students or through research about the (Naiman & Others, 1978; Rubin, 1975; Rubin & Thompson, 1982)

Oxford (2003) noted that some good language learners used effective ways in their L2 learning, they therefore suggested that getting weaker learners to emulate them would help weaker learners to achieve the same results. This has attracted researchers' attention to the value of LS that successful students use and their benefit in advancement of the process of language learning (Griffiths, 2004). The interest in LLS originated in 1970s with Rubin (1975) and Naiman's (1978) investigation of the LLS used to learn a foreign language. Early research in the L2 field stated that good learners use specific yet variant sets of learning strategies within their learning like guessing meaning, and using context (Kehing & Yunus, 2021). Good learners use those strategies in a systematic and organized way in certain L2 tasks Oxford (2003) unlike low proficiency learners who tend to use random, unrelated, and haphazard strategies (Chamot & O'Malley, 1996).

Similarly, Naiman (1996) distinguish between high-level and low-level language achievers in the way they use language strategies. They noticed that advanced language learners utilize a higher number and more variant learning strategies compared to their peers of lower language achievers. Other researchers like Maarof & Murat investigated how students learn a new language and which strategies they utilize to comprehend, learn, and retain the information (Maarof & Murat, 2013). Thus, researchers in this field focused on investigating features of good language learners, considering such features of vital importance for understanding and enhancing successful learning and effective acquisition. Researchers referred to the techniques employed or used by successful language learners as ‘language learning strategies’ (LLS), which not only increase speed and effectiveness of learning but also make learning more enjoyable. LLS, according to Oxford (2003) can make language learning easier, faster, fun, independent and effective

As this line of research progressed more structured definitions of LLS appeared. For example, Rignery (1978) stated that LLS are frequent steps or behaviors learners use to improve their memorization, acquisition, and retention of newly obtained information. Oxford, Lavine & Crookall (2008) agreed with Rignery (1978), stating that learning strategies’ main purpose is to improve and facilitate language acquisition. They also added that, learning strategies are actions, behaviors, steps, or techniques such as seeking out target language conversation partners or giving oneself encouragement to tackle a difficult language task used by learners to enhance learning (Oxford, Lavine & Crookall, 2008). Ghani (2003) asserted the above indicating that language learning strategies are certain actions, attitudes, stages, or procedures learners often use to develop L2 skills which can ease new language incorporation, reservoir, and retrieval. All the

mentioned definitions highlight the role of learning strategies in facilitating language learning in terms of acquisition, retention, and recalling.

Choice of appropriate language learning strategies is another issue that researchers emphasized in the mentioned line of research. In his research, Nunan (1995) stated that the main reason that high-level learners greatly outperformed their peers, especially weaker low proficiency learners, lies in their ability to evaluate and convey their own learning process. Hence, they are able to decide on learning strategies they need to use to improve their learning. Green and Oxford (1995) added that the choice of which learning strategies to use, and their number depends on the target language being learned and whether it is being learned in its country of origin or in a foreign setting. The two researchers reported that L2 learners utilize extra and more frequent strategies than foreign language students do (Kehing & Yunus, 2021).

### ***2.1.2. Classification of Language Learning Strategies***

As suggested by various scholars and in alignment with Oxford's (1990) work, numerous researchers have proposed classifications for LLS based on the accounts provided by proficient language learners. For instance, O'Malley & Chamot (1990) classified LLS into three different categories: cognitive strategies, metacognitive strategies, and social-affective strategies. Oxford (1990) stated six different types of LLS: cognitive, metacognitive, mnemonic, compensatory, social, and affective. The following sections study delves into description of some of the mentioned LLS as introduced by (Oxford, 1990).

### ***1- Cognitive Learning Strategies***

Cognitive learning strategies rely on utilizing one's cognition abilities in a learning task. Thus they positively reflect on learners' confidence and competency when it comes to accomplishing a specific learning task (Teng, 2023).

Cognitive strategies target enhancing links between what the learner already knows and the new target information (Oxford, 1996). Learners use them as a tool to solve problems and to reach their goals through collecting and organizing their thoughts (Cameron & Jago, 2013). Self-questioning, mastering information, creating sentences and paragraphs, paraphrasing, and new information recognition are examples of learning tasks using cognitive strategies (Teng, 2023).

Cognitive strategies include repeating, orienting, information organizing, summarizing, and note taking. They also include reasoning and guessing and finally visualizing/recruiting images for remembering which reflects on upgrading learners' cognitive learning and thinking skills (Teng, 2023).

### ***2- Metacognitive Learning Strategies***

Metacognitive strategies are a process of thinking about cognitive actions of oneself (Teng et al., 2022). They help learners to evaluate and contemplate on their own learning process which results in coming up with the right plan for further learning (Efklides, 2008). In other words, they help learners to set up what works best for them through trying, analyzing and coming to conclusions about what works for them and what doesn't; accordingly they will be better learners through being independent and more competent (Teng, 2023).



Moreover, learners who use meta-cognitive strategies are more autonomous in the sense that they rely more on themselves and are in charge of their learning. Furthermore, they come to develop a sensor that they use while learning which informs them either to continue in case it was positive or to change course in case it was negative (Heidari et al., 2012). Accordingly, students' awareness of metacognitive strategies is crucial because it enables them to identify the necessary resources and tools which will enable them to accomplish their targeted goals, and enhance their confidence (Saks & Leijen, 2019).

### ***3- Compensatory Learning Strategies***

Compensatory strategies are used to “overcome knowledge limitations in all four skills in learning and producing a new language” (Oxford, 1990, p. 90). The learner uses those strategies to compensate for their gaps in knowledge (by using body language or any other way) to help their interlocutor understand and to understand their interlocutor. This is expected to help them avoid any breakdown in communication that might happen as a result of knowledge limitations (Oxford, 1990). Compensatory strategies are suitable for learners with variant social backgrounds, levels, and proficiencies (Teng, 2023).

### ***4- Affective Learning Strategies***

Emotions are a great motivational factor which influences learners' performance when it comes to learning a new language. It is one of the main causes of differences teachers see between one student and another. As a result, research in the literature has focused on students' feelings and affective strategies concentrating on students' awareness of their feelings - especially negative ones - and how they deal with them. This is because it is critical in the learning process

that they know how to spark a specific feeling such as motivation and avoid another such as anger, or anxiety (Arnold, 1999).

Additionally, students' anxiety during learning a foreign language has received a lot of attention from researchers (Horwitz, 2010). Affective strategies deal with firstly, diminishing anxiety through activities like meditation or breathing techniques. Secondly, at the individual level, they can involve cheering oneself up to get motivated, and assessing one's own emotions and feelings regarding learning a new language (Oxford, 1990). Negative thoughts, self-doubt, and fear of people's judgement while communicating, result in difficulties in the foreign language learning and demotivate students within their learning journey. The learner can bypass that through enhancing positive thoughts, self-rewarding for small accomplishments, and being positive all times through laughter, and positive attitudes (Teng, 2023).

### ***5- Social Strategies***

Social strategies are based on the fact that the core of language learning is communication which is basically a social activity. This activity helps the process of combining both learning the language and its own culture together. Some examples of social strategies are clarification questions or verification statements and being familiar with traditions and customs of that culture through cooperating with competent peers as mentioned by Oxford (1990).

### ***2.1.3. The Effect of Language Learning Strategies Instruction and Use on Learning***

#### ***2.1.3.1. Effect of LLS on Students' Learning***

Research examining how students apply LLS in their learning journey is illustrated in the research conducted by Green and Oxford in 1995. They examined LLS use by evaluating 374 students from pre-beginner to intermediate levels according to their ESLAT (English as a Second Language Achievement Test) score at Puerto Rico University. Green and Oxford administered a 50-item Strategy Inventory for Language Learning (SILL) (Spanish version) to evaluate the use of language learning strategies. Results show that the use of LLS significantly differed between the pre-basic group's students and those of intermediate courses. On the other hand, there was no distinction in the use of LLS between the two higher level courses. More importantly, results reveal that cognitive, compensation, metacognitive, and social strategies were highly used by proficient English learners (Jaekel, 2015).

Other research that investigates the effect of using LLS also detected that learners who use strategies in their learning bypassed their peers. They became more productive, fast, and grew more independent. An example of such research studies that investigated the relationship between learning strategies and students' academic achievement is that of (Uslu & Ödemiş, 2016). Findings of their research showed that utilizing language learning strategies significantly resulted in 20% of positive achievement. Utilizing memory strategies as a variable of learning strategies resulted in 23% increase in achievement. Because of the positive and outstanding relationship among memory strategies and achievement, memory strategies users were found to be more successful. These findings are in consistency with research results in the literature such as (Ehrman & Oxford, 1995; Green & Oxford, 1995; Macaro, 2001; Shmais, 2003). Therefore,

presenting and strengthening the utilization of strategies within the process of language learning, is expected to help students show progress in their language performance, and turn them to be more self-directed, autonomous learners, as well as more knowledgeable about the learning process and its goals.

Research in the field of learning Arabic as foreign language has reached similar results when it comes to memory strategies. For example, Abu Hasim, Mustapha, Hajimaming, & Toklubok (2018) have investigated memory strategies usage. Their study depended on qualitative research. The data included eight students who have never been exposed to Arabic within any department at Kolej University Islam Maleka (KUIM). The findings indicated that the student participants regularly utilized sounds and images which included creating semantic maps for Arabic vocabulary learning. The study's findings also revealed that while different AFL vocabulary learning strategies research studies were held at the university level, there is still an opportunity for research from different perspectives to aid students to learn new vocabulary efficiently specifically within the AFL field. (Pisal et al., 2022)

Pisal et al (2022) conducted a study where data was gathered from 30 AFL students at Teknologi MARA Cawangan Perlis University in Malaysia to inspect students' use of vocabulary learning strategies. The results of this study have shown that according to the constructs, students utilize VLS reasonably in general. Study also detected that most students utilized note-taking strategies to learn vocabulary, while the minority utilized metacognitive strategies. According to these results, researchers suggested instructors can start distinct initiatives in their teaching method through presenting different VLS to their students to aid them become more autonomous in their AFL vocabulary learning. The researchers also emphasized the need to maximizing use of metacognitive strategies since it is necessary for improving language acquisition, which in turn

would enable learners to have effective control over their whole learning process (Pisal et al., 2022).

Al-Shuwairekh (2001) conducted a study addressing vocabulary learning strategies that AFL students use in Saudi Arabia. It aimed to investigate the relationship between vocabulary strategy usage and learners' competence. The study depended on multiple cases approach and a survey. The primary objective of the multiple cases approach is to identify the Arabic vocabulary learning strategies (VLS) employed by students, distinguishing between those who use them proficiently and those who do so less effectively. The survey aimed to investigate the differences in the application of VLS, considering specific factors, which include the learner's native language, proficiency level in Arabic, academic performance, course type, the Arabic dialect learned outside of the classroom, and religious identity. The results revealed that there are general variations among the two groups under the seven strategies inspected by this research which are memorization, metacognitive strategies, note-taking, expanding lexical knowledge, using dictionary, and practice. In addition, its data classified three strategy levels. The first level is referred to as the "main strategy level", which includes non- dictionary strategies, using dictionary, note-taking, memorization metacognitive and stretching lexical knowledge while the second is known as the "strategy level" which contains meaning guessing and asking instructor or classmates. Lastly, the third "sub-strategy level," encompasses strategies employed within the second level strategies. For instance, listening to radio is a general strategy that includes listening to news or religious programs and recording them.

The data of multiple cases reveal that learners utilize VLS in specific orders and combinations. The survey results emphasized that both course type and the Arabic variety used outside of class have a relationship with vocabulary strategy usage. Conversely, the individual

factors seem to have a very weak relationship with vocabulary strategy usage. Finally, the social factor (religious identity) has considerable relationship with strategy usage in which Muslim students used VLS more than non-Muslim students. The study was employed in an authentic environment in Saudi Arabia and included a mix of survey and multiple cases method as a research tool to research the relationship between strategy use and success. The survey was used to gather data about VLS to obtain a comprehensive picture about using strategies in which made its results valuable (Al-Shuwairkh, 2001).

#### ***2.1.3.2. Language Learning Strategies Instruction and Learner Autonomy***

The contemporary demands for teaching foreign languages to develop communicative competence since 1990s and the tremendous shift in language teaching to more student-centered approaches has increased the focus on language learning strategies to help students excel and activate their full potential (Oxford, 2003). Student-centered teaching changed the role of the teacher from being at the heart of the classroom and in total control to being a facilitator. Students are encouraged to bear more responsibilities of the language learning experience and become more autonomous and self-directed (Cohen, 2000). This includes diagnosing some of their learning strengths and weaknesses and monitoring their own learning in order to improve.

There is a consensus among researchers in the language learning field about the significance of language learning strategies as a vital method in assisting students' autonomy development and language learning in general (Hsiao & Oxford, 2002; Little, 1995; Nunan, 1995; Oxford et al., 2008). Independent, self-directed learning is impossible to achieve without knowledge and use of proper strategies (O'Malley & Chamot, 1990). Therefore, a crucial

component of learner's autonomy progress is LLS knowledge and reinforcement, as well as students' capacity to choose the suitable ones (Jaekel, 2015).

This has given rise to LLS instruction (or strategies-based instruction) which emphasizes the need to deliberately train students to use a wide range of strategies to enhance their language learning process. Students here 'learn how to learn' while learning language content (Cohen, 2000). According to Cohen (2000) through language learning strategy instruction, students are able to: Firstly, improve both their learning skills and their language skills when they are provided with the necessary tools to self-diagnose their learning difficulties. Secondly, become more aware of what helps them learn the language they are studying most efficiently. Thirdly, experiment with both familiar and unfamiliar learning strategies for dealing with language tasks. And finally, monitor and evaluate their own performance, ideally, transferring successful strategies to new learning contexts.

#### ***2.1.3.3. Suitability of Language Learning Strategies***

There is no one size fits all when it comes to strategy preference as it relies on the context. This means strategies sometimes reflect positively on students' performance and become effective according to a certain number of conditions such as: firstly, whether strategy fits students' learning style preference to a certain degree; secondly, whether it matches the L2 target learning task; and thirdly, whether students are competent in using the strategy and regulating it well with other suitable strategies. Researchers mention that a learner tends to utilize strategy chains (group of strategies) to individualize, customize, and self-direct their own learning experiences (Oxford, 2017). The ability of learners to adapt their strategies in response to varying

learning situations, the teaching methods employed by the instructor, and the demands of the curriculum all contribute significantly to students' learning.

Scholars didn't reach an agreement about whether matching instruction strategies to students' preferences on learning strategies can affect learning positively or improve students' motivation to learn the language. A number of researchers have claimed that matching affects academic learning and success in a positive way. However, other researchers questioned that claim because of the missing realistic validation (Ansarin et al., 2012; Brosh, 2019; Kamińska, 2014).

The diversity in the student population being researched in terms of culture and linguistic background makes the extent to which they adapt to unfamiliar strategies and the practice they need on usage of such strategies vary. Furthermore, learning strategies and specific parts of language such as grammar or vocabulary could be easy for some learners and far more challenging for others (Brosh, 2019). Familiarity with personal patterns can encourage foreign language teachers to develop and create corresponding instructional interferences to target students' learning needs thus, utilizing class time better.

#### ***2.1.3.4. Vocabulary Learning Strategies***

Vocabulary refers to a collection of words that an individual or a group is familiar with and employs correctly. It functions as a reservoir of words that people can utilize accurately and regularly within a specific language context (Ansarin et al., 2012). Learning vocabulary is an important goal. (Nunan, 1995 cited in Vilaca, 2009) mentioned that effective acquisition of vocabulary leads to effective language learning, and shortage in vocabulary reservoir leads to



ineffective language learning. Moreover, Oxford (2003) adds that vocabulary is a valuable component of the language which is vital to all language skills and expressive communication (Oxford, 2003).

Vocabulary learning, however, is a challenging task especially with a language like Arabic where vocabulary can gain new meaning because of changes in their morphological structure. Al-Batal (2006) debated that “the greatest challenge for AFL learners is vocabulary acquisition” (p. 332). This has resulted in a need for vocabulary learning strategies that would specifically enhance this aspect of language learning. This is especially true in classes that focus on communication and developing communicative competence where the focus is on using learned forms in communication. Often in such classes students are expected to come to class after having independently learned (acquired), retained, and can retrieve new vocabulary on their own. Then, they come to class prepared and ready to activate such vocabulary in real life communication during class time (Al-Batal, 2006).

Catalan (2003) defined VLS as the steps students use to learn, move, acquire, and retain vocabulary in their long-term memory. Schmitt (2010) stated that the main goal of VLS is to enable students to use this vocabulary whenever they need. Baharudin and Ismail (2014) emphasize that there is a relationship between VLS use and AFL vocabulary size. They further emphasize that VLS might enhance language learners learning process and turn them to become self-directed, organized, and autonomous.

Schmitt (2002) stated that, like language learning strategies, VLS represents an approach that eases vocabulary learning and encourages the change from teacher-oriented approaches to student-oriented approaches to language teaching and learning. Focusing on VLS represents an approach that gives priority to learner actions and how such actions would develop an important

language learning component like learning vocabulary. VLS can enhance learner autonomy through discovering meaning and consolidating it (Amiryousefi, 2011). Schmitt and Meara (1997) recorded the maximized interest the learning experience receives because of the change in the learner role in the modern classroom from being passive to becoming an active learner. Thus, VLS can be regarded as a means of maximizing learner's role in the classroom through encouraging learners to be more organized, autonomous, and self-reliant. In addition, VLS can aid learners in exploring and strengthening words' meaning competently (Oxford, 2003).

Despite all the above, teachers often concentrate within their classes on the four or five languages skills (as culture is usually considered the fifth skill), but there is no focus on vocabulary. Al-Batal (2006) mentioned that AFL classroom's ultimate focus is on grammar and vocabulary receives much less attention. The majority of students are not familiar with vocabulary learning strategies they could use to facilitate their learning. This situation makes clear the serious need for coaching learners into how to learn vocabulary. One of the most important VLS is mnemonics, which has been proven to be effective and makes a significant contribution to student's learning (Amiryousefi, 2011; Farjami, 2007). Despite its significance, mnemonics haven't been researched in the AFL field and many AFL teachers are not aware of their significance.

## **2.2. What are Mnemonics?**

### ***2.2.1. Mnemonics as an Old Method of Learning***

Mnemonics has been used since ancient eras; in particular, the Greek 500 B.C. The term Mnemonics originates from a Greek word "Mnemosyne" that refers to the knowledge goddess

at the Greek era 500 B.C (Yates, 2001). The Greek leaders used mnemonics as a memory aid that helped them to memorize their speeches and arguments in the senate (Amiryousefi, 2011).

Heidari et al., (2012) stated that mnemonics are strategies for memory which include associating a vocabulary with previously gained knowledge. In addition, mnemonics is the procedure of changing the target vocabulary to be learned into a form that makes it easy for students to recall and remember. It is defined as a set of techniques used to facilitate learning process through converting target material to a certain form easy to recall and remember (Cohen, 1987).

The role of memory in our lives is fundamental as it enables us to retain and utilize knowledge gained from past experiences. Without memory, every aspect of our lives would require constant relearning. The absence of memory would hinder our ability to learn, as all new information would be immediately forgotten. Memory serves as the foundation for our cognitive processes, allowing us to build upon previous knowledge and make meaningful connections. There are two types of memory: short-term and long-term, where the goal of most learning is to have knowledge stored in the latter. The reason is that the short-term memory, though fast in its use, is temporary and has a small storage capacity. On the other hand, long-term memory is gigantic and has no limits, though it is slow when it comes to processing and needs time to retain the information (Amiryousefi, 2011). Thus, the goal of vocabulary acquisition and retention is to convert new vocabulary from being stored in short-term memory into long-term. In this way, students can recall and retrieve words whenever they need.

Moving vocabulary from short term to long term memory is a tricky job, since as mentioned earlier, the latter is slow at storage. It is tricky because it needs learners to find ways

to retrieve or recall stored material quickly and efficiently (Amiryousefi, 2011). This is where mnemonics come in handy since it associates newly learned to previously existing information. (Amiryousefi, 2011) asserts that there is tangible evidence that mnemonics is effective in helping to remember learning. When materials are introduced in a meaningful way that is related to what has been already known by students, it helps in its retention for long periods of time. Hence, the process of retrieving information using verbal or visual clues becomes easier.

The effectiveness of mnemonic devices has been proven for all proficiency levels. However, there is evidence that they are more useful to students at the beginners' level. This is because they are expected to memorize and retain almost all the information for every single learning activity they are exposed to during that phase (Levin, 1993).

#### ***2.2.1. Mnemonics as a Technique***

Mnemonics are techniques which students rely on for improving memorizing information and recalling it which fall under cognitive strategies. Students use them with difficult materials to facilitate learning and try to manage it in a better way through linking new learned information to their prior accumulated knowledge, consequently that enhances the recalling process. Mnemonics use many connections such as body language/movement, sounds, images, keywords, and location (Teng, 2023).

#### ***2.2.2. Mnemonics as a Learning Strategy***

Mnemonic strategies focus on guiding learners to use simple associations that would guide them to associate target information easily in a rewarding responsive way. This is the reason mnemonics are useful when it comes to learning vocabulary or grammar rules. It means students

depend less on working memory and more on long term memory. It also allows the student to access the large amounts of information successfully moved to the latter.

When learning vocabulary, mnemonics involve relating the word with some previously learned knowledge by using some form of imagery or grouping (Heidari et al., 2012). Mnemonics also involve strategies such as grouping the words and relating them to a picture which is used to retain the words in the memory (Amiryousefi, 2015). Thus, mnemonics is a way of improving learner's memory for items having an associative component originally introduced to enhance the learning of second languages. Mnemonics emphasize distinctiveness, increase the vividness and concreteness of the word to be learned which are more likely to be forgotten over time. Conversely, mnemonics emphasize relational and semantic information (Anari, Sajjadi & Sadighi, 2014).

According to Tabatabaei and Hejazi (2011 as cited in (Safa & Hamzavi, 2013) mnemonics is a useful strategy for acquiring vocabulary independently. It also accelerates a student's motivation by overseeing their own learning and that positively affects their vocabulary acquisition and their academic achievement.

There is plenty of research that establishes the positive effect of using mnemonics on learning vocabulary. For example, Congos, 2011 (as cited in Azmi, Najmi, & Rouyan, 2016) indicates that mnemonics helped increase students' test marks by 77%. Zulfa (2019) points out that learning outcomes after using mnemonics have improved by 90%. Similar results are detected by (Kayaalti, 2018).

### ***2.2.3. Types of Mnemonics in Literature.***

There are several types of mnemonics based on how each works on moving learned material from short term to long term memory. For example, linguistic mnemonics or **keyword method** consists of two steps: first the learner decides the target word to be learned then makes a verbal association between the learners' native language or another language the learners know with the new word of the second language. After that, they make a visual link to help remember and retrieve that new vocabulary when needed. The visual link is considered not only a powerful brain stimulus as mentioned by Shapiro & Waters (2005), but also, they act as an interest and motivation enhancer. For example, when learning the word 'مريض' ('mariḍ'), the student needs to find a word similar to the Arabic word. For an English speaker, it isn't a far stretch to arrive at the word "married" and the learner visualizes that someone got married while s/he was sick. The method is supposed to be effective as learners can acquire and recall the new target word through linking it to mind rooted knowledge. As a result, it could be retained as a long-term memory (Siriganjanavong, 2013).

Scholars sorted out mnemonic devices differently. Thompson (1987) categorized mnemonics strategies in five categories, **linguistic, spatial, visual, physical response and verbal methods**. On the other hand, Oxford (1990) provided four main categories which are **generating mental associations, employing sounds and images, revising well and implying act**. Another categorization is presented by Holden (1999) who suggests that mnemonics devices are categorized to **visual imagery strategies, and verbal strategies**. In the following section Thompson (1987) classification, which is the most inclusive, will be described. (As cited in Wenden & Rubin, 1987).

### ***A. Linguistic Mnemonics.***

This includes Peg word method, and key word method.

1. ***Peg word method:*** Learners remember unrelated items easily through connecting them to effortlessly memorizable ones (pegs or hooks). The method consists of two stages. In the first stage, learners memorize ten duos (number-rhyme) such as one bun, two shoe, three tree, four door, five hive, six chicks, seven heaven, eight gate, nine pine, ten hen. During the second stage, students need to visualize the target word and associate it to the rhyming words. As a result, students learn those words in a merged picture include both the presented word and the peg. For instance, if the target word to be memorized is gardening. After introducing the meaning to students to the target word which is gardening. The expected peg could be Ahmad and students need to associate that to a mental image in which they visualize Ahmad is doing gardening in a garden (Amiryousefi, 2011).

2. ***The key word method (KWM):*** According to Hulstijn (1997) the KWM has three stages. The first stage is finding a keyword using L1, or L2 or L3, etc. which sounds similar to the target word. Secondly, linking the target word to the keyword. Finally making a mental picture of both the keyword and the target word. For instance, if the target word is ‘za:ra’ (‘to visit,’ in Arabic) and it sounds similar to the clothing brand Zara, students can use that as a keyword, and they can link it to a mental image through visualizing themselves visiting Zara to get some clothes.

### ***B. Spatial Mnemonics***

This includes the loci method, spatial grouping, and finger method.

1. ***The loci method:*** The loci method works through associating words to a familiar place such as someone’s home. The learner can associate words to objects in rooms. The learners

visualize themselves walking in that familiar place and they recall everything they have put in each place (Eysenck, 2001). For example, if the target words are ‘*mari:d*’ (sick), ‘*mustaffa*’ (hospital), ‘*‘tabi:b*’ (doctor), ‘*‘ila:dʒ*’ (treatment). The student (who is sick) imagines allocating these words to their room. The room door is the hospital (‘*mustaffa*’), the small table on the right is the ‘*‘tabi:b*’ (doctor) and the vase is the ‘*‘ila:dʒ*’ (treatment).

2. ***Spatial grouping***: Instead of listing words in columns as they are used to, students are encouraged to use different patterns such as a triangle. Writing words using new patterns facilitates recall and becomes more effective as long as they memorize the pattern, they can recall words which are assigned to the pattern fragments like memorizing family vocabulary using a circle pattern where the vocabulary shapes the circle (Holden, 1999).

3. ***The finger method***: Learners link target words to their fingers. Each word with a finger. It is very beneficial to memorize numbers, weekdays, months lists etc. It was proven to be an effective method to remember new information. However, for an extremely short time. For example, index finger is one, index finger and middle finger are two. Index, middle and ring fingers are three and index, middle, ring and little fingers are four (Holden, 1999).

### ***C. Visual Mnemonics.***

This includes using pictures and visualization.

1. ***Pictures***: Students memorize new target words better by associating them with images (Thompson, 1987). Gairns and Redman (1986) acknowledge that images and objects can facilitate vocabulary recall. Similarly, Wright (1989 as cited in Amiryousefi, 2011) declares that images and objects are utilized to deliver information and meaning and more importantly they



can be utilized to students' interest and motivation. An image can clarify a word's meaning with this method and the definition can be included with the image. This method is valid to be used with concrete words and with novice or pre-intermediate learners (Amiryousefi, 2011).

**2. *Imagery or visualization:*** In this method, students associate target words with mental imagery or visualized scenes. It is very useful with abstract words (Holden, 1999; Thompson, 1987). Visualizing can help in vocabulary acquisition (O'Malley & Chamot, 1990). For example, students can memorize the word '*taḍhija*' (sacrifice) through associating it to a mother's sacrifice to her kids. Students use different mental images or scenes according to their life experiences and imagination. This method is very similar to the loci method as they are both based on visualization. However, the difference between the two is that the loci method is associated with a familiar and tangible place. However, this method embraces pure imagination with no specifications (Amiryousefi, 2011).

#### ***D. The Verbal Method***

This includes verbal mnemonics and storytelling.

**1. *Verbal mnemonics:*** Verbal mnemonics consist of constructing a meaningful sentence or phrase linking a part of a foreign word (e.g. in Malay) to the definition of the foreign word (Cohen, 1987). Some scholars have the view that mnemonics should be restricted to concrete words because it may be more difficult to develop concrete images for abstract words. However, verbal mnemonics (a sentence can link the keyword with the definition) do not suffer the same drawback (Anari et al., 2014).

2. ***Storytelling or the chain of narrative***: The learner associates target words jointly using a story. First, the learner needs to link the target words with a subject or several subjects. After that learners link them together by making up a story using these words (Thompson, 1987; Holden, 1999). It is dedicated to advanced level learners. For example, the target words are ‘*mari:d*’ (sick), ‘*mustaffa*’ (hospital), ‘*tabi:b*’ (doctor), ‘*tabaruʃ*’ (to donate), ‘*ʕila:dʒ*’ (medication). Students create a story about one of their friends who was very sick ‘*mari:d*’ and fell on the ground, injuring his head. His friends rushed to the hospital where the doctor ‘*tabi:b*’ gave him stitches to stop the bleeding. After that the doctor ‘*tabi:b*’ prescribed a medicine ‘*ʕila:dʒ*’ and recommended to take few days off until he has recovered, and the wound is fully healed.

### 3. ***Physical Response Methods***

This includes physical response method and physical sensation method.

i) ***Physical response method***: This method indicates that the student move parts of his body or his full body in a specific way that clarify the target vocabulary meaning. For instance, clapping while walking around the room. This can also be performed mentally, by visualizing oneself walking around and clapping (Thompson, 1987; (Holden, 1999). Thompson asserted that linking those words to physical moves improves understanding and recalling.

ii) ***Physical sensation method***: This method offers a physical link context with the target word in which it is associated with the biofeedback in other words, specific strong physical sensation such as feeling warm or cold, toughness and smoothness (Oxford & Crookall, 1990). Scarcella and Oxford (1992) contended that students link the target vocabulary word to a physical sense. For instance, students can feel hot when they learn the word warm and vice versa (Amiryousefi, 2011). Developed, contextualized, and repetitive opportunities are given to

students who need to learn concepts or words. Examples of these methods are semantic mapping, semantic feature analysis, Frayer model, Graves modification, keyword method (mnemonics), and some developed approaches of ad hoc teacher. The chances of elaboration and cost when it comes to either students or teachers time is huge using various criteria. At the end, the teacher is the one who decides which one to pick according to their opinion and the type of vocabulary they teach (Anari et al., 2014).

### **2.3. The Significance of Students' Perceptions**

Perceptions are the core foundation for this piece of research. Perceptions define the relationship between an action, a task in hand, and a persons' perspective concerning it (Eisenhart, Shrum, Harding and Cuthbert, 1988). Psychologists of education stated that students' perceptions have a significant role in language learning.

#### ***2.3.1. Students Perceptions***

Within the past few decades, students' perceptions became the center of attention for researchers due to the increased focus on learners' role in the process of language learning. Nevertheless, Wenden (2001 as cited in (Breen, 2001) reported that student perceptions did not receive enough research. Existing research indicates that students' perceptions have a tangible role in language learning and achievement. For example, research indicates that perceptions of learners about their experience in learning a foreign language within their classrooms have a significant effect on acceptance of pedagogical and programmatic applications used in their learning context and have been proven to have an impact on linguistic results (Tse, 2000).

Students' perceptions regarding the effectiveness of approaches and activities used by teachers within classrooms could affect their learning motivation and expectations about the language, their judgment about easiness or difficulty of a language or a language activity as well as the learning strategy they prefer (Richards & Lockhart, 1994). Ellis (2008) debated that comprehending students' perceptions is significant to pedagogy of the language. It also affects decision making within the classroom and curriculum. Horwitz (1988) stipulates that awareness of students' perceptions can help instructors, and curriculum creators understand students' expectations regarding issues such as accuracy and pronunciation significance.

Since student perceptions control learners' views, judgements, and decision making about their learning process within the education field, knowing students' perceptions about a learning strategy could make a difference in facilitating learning a difficult language such as Arabic. Furthermore, choosing to use certain language strategies is affected by factors like individual differences especially related to level of language proficiency, strategy training students received, learning context, and their personal preferences (Sukying, 2021). In the same vein, Grainger (2012) claims that students' choice of a language learning strategy relied upon cultural background and the context of learning. In addition, cultural values and instructional material affect learning strategies (Chamot, 2004; Oxford & Crookall, 1989; Oxford, 1990). For example learning a language in an individualistic environment in which competition is valued reflected in students choice of individual strategies over the co-operative ones (Sukying, 2021). Oxford (1990) confirms that students' cultural values and the educational system influence their strategy selection (Sukying, 2021).

### ***2.3.2. Students' Perceptions About Mnemonics***

Rasiban et al., (2019) conducted an experiment to measure effectiveness of using mnemonics as a memory strategy to help Indonesian students learn writing techniques of Japanese characters (Kanji) effectively. The researcher recruited 30 students at the Japanese language department at the faculty of education at the state university in Indonesia. However, no information about age or gender was mentioned. The researcher used two pre-tests (Japanese as a foreign language test (JLPT) to identify their current knowledge about the Japanese letters and administrated a primary questionnaire. After that phase and across the semester, the researcher presented the Kanji letters using mnemonic strategies. Within the last class of the semester, the researcher managed a final test and online questionnaire to the same experimental class. In addition, the researcher organized a controlled interview for every student to obtain detailed information about the experience and the usefulness of mnemonics as a strategy. The results of the study indicated that using mnemonics in general instruction and the linking technique in specific was very effective. This was indicated by improvement in students' recall, acquisition, recognition, and understanding. However, that strategy was not usable or could not be linked with all Kanji letters. Therefore, the researcher emphasizes the importance of using visual strategies to remember similar letters especially in case of students from different backgrounds regarding their mother tongues (i.e., whether they are similar to the writing system or different). Lastly, study proves that teaming mnemonics with other media technology such as videos or songs to facilitate learning could be useful (Rasiban, Sudana & Sutedi, 2019).

In another study, Amiryousefi (2015) attempted to explore Iranian EFL learners' and teachers' beliefs concerning the usefulness of vocabulary learning strategies. The data is collected after running a questionnaire to 392 EFL instructors and students. The findings reported that both

students and instructors thought a specific strategy (like being attentive to vocabulary structures, semantic relations, guessing meaning using context, functions, and utilizing monolingual dictionaries) could be highly beneficial in exploring and merging new vocabulary meaning. On the contrary, learners appeared hesitant to utilize their native language, bilingual dictionaries, and mnemonic devices. Further, Kruskal-Wallis' test results expressed variations in students' preference for certain strategies within different educational levels. The findings of this study can enhance the quality of learning and teaching, since instructors can modify their educational practices which students find useless (Amiryousefi, 2015).

Azmi et al., (2016) examined effects of utilizing mnemonics on English vocabulary in a case study for English language learners in Sekolah Kebangsaan Sungai Udang (SKSU) primary school. The study used a mixed method approach including a questionnaire to collect quantitative data, while the qualitative portion analyzed open ended questions. The study found that numerous effects when utilizing mnemonic techniques in learning English vocabulary. The data gathered included effects that have been clarified using a questionnaire after teaching two English vocabulary classes. The findings of this study show the effect of using the technique of mnemonic in English vocabulary learning. The study emphasized that most participants agreed upon their preference to the mnemonic technique versus regular teaching technique.

## **2.4. Conclusion**

The above review of literature makes clear that language learning in general and mnemonics in specific has gained more ground in today's classrooms. The reason is twofold. To begin with, the focus in modern language classrooms on enhancing students' role in developing their language learning process and increasing their autonomy. Secondly, the positive effect of

using language learning strategies and mnemonics on specific on students' learning. The literature review also makes clear the importance of familiarity with student perceptions of techniques being promoted in language learning classes – mnemonics in the case of this study – since these perceptions have a detrimental effect on the successful adoption and usage of any learning strategies or techniques being introduced to learners.

## **CHAPTER 3: METHODOLOGY**

### **3.1 Chapter Overview**

This chapter outlines the research methodology that targets exploring AFL students' perceptions of using mnemonics as a strategy to enhance their vocabulary acquisition and retention, the kind of challenges they face when using mnemonics, and the type of mnemonic strategies that students view as most effective. The methodologies and tools in this chapter are selected because of their appropriateness in answering the research questions.

1. "To what extent do AFL students perceive mnemonic strategies as an effective way for learning Arabic vocabulary?"
2. What are students' perceptions about the most useful Mnemonic strategies for learning Arabic vocabulary?

The chapter is divided into sections that outline the methodological approach of the study as follows: Research design; Research participants; Research instruments; Research procedures; Data analysis.

### **3.2 Research Design**

Using a qualitative-quantitative mixed approach matches the study goal of exploring AFL students' perceptions about using mnemonics to improve their vocabulary acquisition and retention. The qualitative research generates a narrative or written description of the researched phenomena (Vanderstoep & Johnston, 2009). Lincoln, Guba & Pilotta (1985) asserted that qualitative research follows the overall naturalistic inquiry views which involves/indicates researching something in its authentic/normal condition same as it is Moreover, Qualitative research also helps capture any unexplained responses from students who have undergone



quantitative research methods. According to (Patton, 2002) qualitative research is concentrated on small-scale samples up to even sole cases if it was selected with determination. The goal here is to detect in depth data about targeted phenomenon (i.e., student perceptions about using mnemonics when learning Arabic vocabulary) in order to fully understand it. On the other hand, Vanderstoep & Johnston (2009) confirmed that quantitative research turns the research study into figures to help prove or disprove a general assumption or hypothesis targeted by research study. To conclude, the use of a mixed approach enhances data analysis and provides an in-depth understanding of the topic and accordingly validates study results and conclusions (Johnson, Onwuegbuzie & Turner, 2007).

This research utilizes a combination of qualitative and quantitative methods which provides a comprehensive investigation of the research questions (Calleja, 2009; Creswell, 2007; Greene, 2007).

In order to gather the targeted quantitative and qualitative data, the researcher administered a questionnaire that included three sections: open-ended questions to gather qualitative data, Likert scale utilized for gathering quantitative data, and biographical data about study participants. Collecting data using questionnaire instruments is very effective. Not only does it save effort and time but also can gather a gigantic amount of data in a short time (Perry, 2011).

### **3.3. Research Participants**

The researcher utilized the method of convenience sampling approach to recruit available student participants to respond to the questionnaires and the interviews Perry (2011) defined convenience sampling as a method researchers employ to recruit participants out of an accessible population (Perry, 2011). The researcher collected data from students at Leiden University in the

Netherlands. This was done out of convenience since this is the student body who were willing to participate in the study. Most students were Dutch but some of them were from other western countries namely, the US, France, Italy, Turkey, Germany, Denmark, Hungary, Netherlands, Russia, Romania, and Costa Rica. The participants included 43 students. The gender distribution of participants are 31 females and 12 males. Their ages range between 19 and 45 years old. Most of participants are undergraduate students at Middle East Area of International Studies, African Studies, Middle Eastern Studies. (Please find diagrams representing above data in appendix (p.115).

### **3.4. Study Context**

The Arabic language program at Leiden University has four blocks of elementary Arabic (first and second semesters) to high-intermediate (third and fourth semesters). Participants have studied Arabic for four to eight semesters. The researcher received consent from all study participants to take part in the questionnaire and to conduct an online interview following the guidelines received by the ethical and privacy officer at Leiden University.

### **3.5. Research Instruments**

#### ***3.5.1. Questionnaire***

All survey questions were adapted from Mohamed's study (2015) to match the requirements of the present research. However, questions number 4, 9, 10, 11, 14, 20 and 21 are new questions that resulted from the current study needs. The same is true of questions number 2, 5, and 8 in the open-ended section of the questionnaire.

The questionnaire is divided into three sections. Section I targets biographical information about respondents. This includes questions about gender, native language, number of languages respondents know and their level of proficiency in each, number of semesters they studied Arabic, and finally the highest degree they attained. It is important to mention here that researcher provided respondents in the study questionnaire (section 4-point B and section 5 points 2&3) a definition of mnemonics. The researcher also provided respondents with examples of the various types of mnemonics (p. 119). A copy of the questionnaire is provided in the study appendix I, p. 114

Section II consists of Likert scale/closed-ended questions. The content of the close-ended questions is dedicated to initially collect target data about AFL students' perceptions about the effectiveness of using mnemonics to improve Arabic vocabulary acquisition and retention generally. The Likert scale ranges from: 1 "strongly disagree," 2 "disagree," 3 "neither agree nor disagree," 4 "agree," and 5 "strongly agree." This section focuses on the perceptions of students about using mnemonics in learning Arabic vocabulary. A total number of 21 questions were created using a Likert scale. Like Mohamed (2015) questionnaire three statements, specifically 4, 5, and 11, are recruited from BALLI (Beliefs About Language Learning Inventory) which was founded by Horwitz (1985) BALLI has been developed using teachers and students of ESOL (English as a Foreign language in America) then it has been upgraded into three different versions to explore the perceptions of American students of foreign languages. Horwitz developed the BALLI latest version in 1988 and it included 34 items that explored students' perceptions as mentioned earlier: 1- Language learning challenge, 2- Nature of the process of learning a language, 3- Language learning ability, 4- Strategies of learning and communication, 5- Prospects and motivation.

The following table is adapted from Mohamed's study (2015) to show themes tackled by each set of statements in Likert scale questions in the current study.

**Table 3.1**

*Themes Presented in Questionnaire Items*

What is being tested	Item number
Mnemonics and students' motivation	6
Mnemonics as fun or entertainment	9
Mnemonics and students' anxiety	10, 13
Mnemonics for review of vocabulary and its effect on retention	3, 17, 5, 11, 19, 20, and 21
Mnemonics and vocabulary instruction	2, 4, 7, 14, 15, 16, 18 and 19.
Using Mnemonics in class (specifically during first encounter with vocabulary word)	1, 8, 11, and 12.

*Note. This table shows themes item numbers presented in the questionnaire items.*

Section III is composed of open-ended questions, which aims at eliciting more details about using mnemonics to enhance vocabulary acquisition and retention. Furthermore, it allows students the freedom to share their experience in detail about mnemonics strategies used with Arabic vocabulary learning in their classroom. The content of the open-ended questionnaire aimed at discovering in-depth and detailed insights of the AFL students' perceptions about the effect of using mnemonics to improve Arabic vocabulary acquisition and retention, how mnemonics were

used within their classroom and during their learning process, as well as their preferences in relation to using mnemonics.

### **3.5.2. Interviews**

The interviews were administered following the guidelines received by the ethical and privacy officer at Leiden University and AUC. Like open-ended questions, the goal of interviews is to gather more in-depth qualitative data about interviewees' perceptions regarding effectiveness of mnemonics, its importance, and challenges they face when using it. Interview questions are found in appendix II, p. 123.

### **3.6. Research Procedures**

Study participants received the open-ended online questionnaire through Google forms. Questionnaire respondents were asked if they would like to participate in a one-on-one interview. Five students from the participants who responded to the online questionnaire expressed their willingness to do so. Those were the subjects recruited for an online interview through the Zoom platform. The researcher received students consent through email following guidelines of Leiden University privacy officer and AUC.

### **3.7. Data Analysis**

The researcher collected data using Google forms (online questionnaire). The advantage of using Google forms is that pie charts can be generated automatically which show the percentages of responses for each item in the questionnaire. After that the questionnaire responses are analyzed

and were categorized into themes which were utilized to build the tables. The researcher utilized the students' questionnaire responses as quantitative data to identify distinct themes present in the open-ended questions. Using google forms (the questionnaire tools) allowed the researcher to gather and analyze data using the automated data charts including both pie and bar charts. Regarding the interviews and open-ended questions, student responses were gathered, transcribed (in the case of interviews) then analyzed into themes, which address the research questions. Results of all the above will be presented and discussed in the following chapters.

## CHAPTER 4: RESULTS AND DISCUSSION

### Chapter Overview

This chapter highlights the data gathered through the research instruments which are the online questionnaire and the interviews. The research investigated AFL students' perceptions about using mnemonics as a strategy to enhance their vocabulary acquisition and retention. Therefore, it tries to answer these two research questions:

1. To what extent do AFL students perceive mnemonic strategies as an effective way for learning Arabic vocabulary?
2. What are students' perceptions about/as to the most useful Mnemonic strategies for learning Arabic vocab?

The chapter is divided into two main sections each addressing results pertaining to one research question. Thus, section one addresses results relating to the first question and section two addresses the second question. Each of the mentioned sections is divided into sub-sections which address the results of the tools used (namely the questionnaire close-ended and open-ended questions plus the interviews) in regard to the targeted question.

### **4.1. To What Extent do AFL Students Perceive Mnemonic Strategies as an Effective Way for Learning Arabic Vocabulary?**

#### ***4.1.1. Questionnaire Close-ended Likert Scale Questions***

This section looks into the results of Likert scale questions pertaining to students' perceptions about the effectiveness of mnemonics by inspecting how they perceive this strategy and its effect on various aspects of their vocabulary learning. Results of Likert scale statements are organized

according to the topic statements they deal with. Topics addressed are the effect of mnemonics on motivation, fun, anxiety, retention, learning and revision, remembering, vocabulary instruction, and class instruction.

### ***1. Mnemonics and Students' Motivation***

This section includes one statement only specifically statement 6. The goal of statement 6 ***“Using Mnemonics motivates me to learn new vocabulary.”*** is to examine the effect of using mnemonics on learners' motivation. Results of this statement indicate that 14 participants responded “agree,” 11 participants responded, “strongly agree,” while 13 participants responded, “neither agree nor disagree.” On the other hand, 4 participants responded “disagree,” while 1 participant responded, “strongly disagree.”

**Table 4.1**

#### *Mnemonics and students' Motivation*

Mnemonics and students' Motivation	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	11	14	13	4	1
Percentage	25.5	32.5	30.2	9.3	2.3

The figures show that 58% of the students agreed compared to 11.6 % who disagreed while 30.2% remained neutral. This means that the attained results indicate a majority but not a clear one considers mnemonics to be motivating. A quick review of table of results reveals that the reason for not having a clear majority (i.e., over 70%) is the high percentage who voted neutral to this statement (30%).



This result was rather unexpected especially in light of the following sentence which indicates that a clear majority of respondents regard mnemonics as ‘fun’ (76.8 %). Fun activities are expected to be motivating according to researchers like Brosh (2019) and Kamińska (2014) who asserted that language learning strategies have a positive effect on students’ motivation to learn. One explanation to students’ apparent lack of enthusiasm to that statement (despite their agreement to it) could be the challenges related to using mnemonics that students referred to (as will be explained in detail under interviews and open-ended questions). It must be mentioned here however, that the fact that a majority (even if not a clear one) consider mnemonics as having a positive effect on motivation is in line with results reached by researchers like Shapiro & Waters (2005) who pointed out the positive effect of mnemonics on this aspect of learning. These results also are further emphasized by data from open-ended questions.

## ***2. Mnemonics and Learning Context (as Fun and Entertaining)***

This section also includes one statement only namely statement 9. The goal of statement 9 ***“Using Mnemonics in learning vocabulary is fun.”*** is to examine the affective dimensions of using mnemonics in the learning context. Results indicate that 19 participants responded “agree,” 14 participants responded, “strongly agree,” while 7 participants responded, “neither agree nor disagree.” In the meantime, 2 participants responded “disagree,” and 1 participant responded, “strongly disagree.”

**Table 4.2***Mnemonics and Fun or Entertainment*

Mnemonics and fun or entertainment	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	14	19	7	2	1
Percentage	32.5	44.1	16.2	4.6	2.3

The numbers show that 76.6 % of the students agreed to the statement that utilizing mnemonics in learning vocabulary is fun compared to 6.9% who believed otherwise. 16.2% of students remained neutral. This means that a clear majority agrees with that statement which indicates that most students regard mnemonics as fun. This result is further verified by students' open-ended questions and interviews where some indicate that they deliberately relate new words to funny mind-images when creating mnemonics and talk about having fun working with friends on doing that. Thus, unlike the previous statement this result is in line with expectations resulting from research in the field. In fact, mnemonics as fun or entertaining activity is one of the important reasons why using mnemonics as a learning strategy for learning vocabulary is encouraged (Pisal et al., 2022).

### ***3. Mnemonics and Students' Anxiety***

This section includes statement 10 & statement 13. These are two opposite statements. The first statement looks into effect of mnemonics on increasing feelings of unease and the second statement addresses its effect on reducing feelings of unease when learning vocabulary.

The goal of statement 10 *“I don’t feel at ease when using Mnemonics in my Arabic class to learn vocabulary.”* is to investigate students’ levels of anxiety when using mnemonics. Higher levels of anxiety during learning are supposed to affect students learning negatively according to Krashen’s monitor model (1984). Results of this statement indicate that 0 participants responded “agree” and “strongly agree,” while 3 participants responded, “neither agree nor disagree.” On the other hand, 22 participants responded “disagree,” while 18 participants responded “strongly disagree.”

**Table 4.3**

*Mnemonics and students’ anxiety*

Mnemonics and students’ anxiety	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	0	3	22	18
Percentage	0	0	6.9%	51.1	41.8

The above figures show that 6.9% of the students remained neutral compared to 92.9% disagreed. This means that there is a clear majority of students who favour mnemonics by rejecting that mnemonics make them feel uneasy. This result could probably be attributed to the fun factor related to usage of mnemonics in class which makes it less probable that using this strategy would make students feel uneasy.

Another statement that falls under this section is statement 13 *“Using Mnemonics in Arabic class, makes me feel less anxious”*. Results here indicate that 4 participants responded “strongly agree,” 10 responded “agree,” while 18 participants responded, “neither agree nor

disagree.” On the other hand, 11 participants responded “disagree,” and 0 participants responded “strongly disagree.”

**Table 4.4**

*Mnemonics and Students’ Anxiety*

Mnemonics and students’ anxiety	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	4	10	18	11	0
Percentage	9.3	23.2	41.8	25.5	0

The figures shows that 41.8% of the students remained neutral compared to 32.5% who agreed and 25.5% of students disagreed. The attained results indicate that there is a considerable number of students who are either neutral or against the previously mentioned statement that using mnemonics in class make them less anxious.

The high percentage of neutral responses here suggest that a considerable number of respondents do not feel that use of mnemonics when learning vocabulary actually result in or is the cause of reducing anxiety. Taken with the previous statement (which denies the existence of anxiety when using mnemonics) it seems that results here balance those of the previous statement. In other words, results of questionnaire regarding anxiety indicate that while students refuse ‘not feeling at ease’ when using mnemonics, a considerable percentage of them fall short of agreeing that mnemonics actually does – in and by itself – reduce anxiety. This again could be attributed to challenges of using mnemonics that students suggested in open-ended questions and interviews. Such challenges have also been mentioned by researchers, like Knight (2023), who state that students may encounter some challenges when using mnemonics. Another explanation of the

above results could be what Brooks, Friedman & Yesavage (1993) reported about adult learners being often anxious about using new techniques or strategies like mnemonics. Moreover, they indicate that adults struggle coming up with and remembering visual images associations. Such challenges could have resulted in students' reluctance to consider mnemonics usage as a cause or a reason for reducing anxiety when learning vocabulary.

#### ***4. Mnemonics for Review of Vocabulary (and its Effect on Retention)***

This section deals with 7 statements all involving instruction and learning of vocabulary using mnemonics. These are statements number 3, 17, 5, 11, 19, 20, and 21. The first two statements address student perceptions regarding the use of mnemonics to review vocabulary (statements 3 and 17). What is notable in statement 3 ***“Mnemonics should be used for reviewing the learned vocabulary.”*** is the strength of the statement itself in relating vocabulary learning with mnemonics through the use of the word ‘should’ regarding reviewing and learning of mnemonics. Here, 11 participants responded “strongly agree,” 18 participants responded “agree,” while 8 participants responded “neither agree nor disagree.” On the other hand, 6 participants responded “disagree,” and 0 participants responded “strongly disagree.”

**Table 4.5**

*Mnemonics for Review of Vocabulary (Before an Exam)*

Mnemonics for review of vocabulary (before an exam).	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	11	18	8	6	0
Percentage	25.5	41.8	18.6	13.9	0

The numbers shows that 67.3 % of the students agreed about the statement that mnemonics *should* be used in reviewing learned vocabulary compared to 13.9% who believed otherwise. 18.6% of students chose to stay neutral. Thus, the above figures indicate a clear majority agrees that mnemonics should be used for reviewing vocabulary. Such positive results are in line with those reached by Levin (1993) about the usefulness of mnemonics for the mentioned purposes. Likewise, Rasiban et al. (2019) indicated that mnemonics improved students recall, acquisition and retention.

The goal of statement 17 *“Before an exam I would prefer to use a Mnemonics activity to review than a vocabulary lists.”* is to examine Mnemonics for review of vocabulary under stress. Here, 4 participants responded, “strongly agree,” 15 participants responded “agree,” while 13 participants responded, “neither agree nor disagree.” In the meantime, 7 participants responded “disagree,” and 4 participants responded, “strongly disagree.”

**Table 4.6**

*Mnemonics for Review of Vocabulary (Before an Exam)*

Mnemonics for review of vocabulary (Before an exam).	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	4	15	13	7	4
Percentage	9.3	34.8	30.2	16.2	9.3

The numbers show that 44.1 % of the students agreed about the statement that mnemonics should be used in reviewing vocabulary before the exam compared to 25.5% who believed otherwise. 30.2% of students chose to stay neutral. This means that the percentage of students who

agreed to the statement are only slightly more than those who were neutral. Thus, despite the fact that a clear majority of students agrees to using mnemonics for reviewing vocab (in fact they agree that it 'should' be used for that purpose) as indicated by previous statement, a smaller percentage agrees to using it for exam revisions. It is also interesting to note that compared to the previous statement a bigger percentage of students stand neutral about using mnemonics for exam revisions compared to using it for revision in general.

The above results seem to contradict with results from studies emphasizing the positive effect of mnemonics in reviewing vocabulary in foreign language classes and that using mnemonics is an effective technique for learning (Rasiban et al., 2019). This may be explained on the bases of data gathered from interviews where students mention that using mnemonics directly before the exam is not likely to lead to positive results. Students made it a point that creation of mnemonics directly before the exam could lead to remembering the created link but forgetting the word. They emphasized that creation of mnemonics should be some time before the exam and that the word and the created mnemonic should be reviewed several times before the exam (this will be further discussed in sections below when discussing challenges of using mnemonics). Furthermore, it would seem that the level of tension that students feel before exam may make them resort to traditional methods of revisions that they are more used to employing in exam situations. Thus, results reached here may not reflect on students' perceptions of effectiveness of using mnemonics for exams but more so on the best procedures to follow to help get the best results out of this use or the dominant traditions of study of vocabulary in this group's learning environment. Further research is needed to inspect the effect of such factors on usage of learning strategies like mnemonics. The rest of the statements in this section addresses how students view mnemonics as

a tool for remembering vocabulary and its effect on vocabulary long term retention as demonstrated by statements 5, 11, 19, 20, and 21.

The goal of statement 5 ***“It is easier for me to remember vocabulary using Mnemonics”*** is to examine student perceptions about effectiveness of using mnemonics as a tool to remember vocabulary. Results of this statement indicate that 22 participants responded, “strongly agree,” 13 participants responded “agree,” while 6 participants responded “neither agree nor disagree.” On the other hand, 2 participants responded “disagree,” and 0 participants responded, “strongly disagree.”

**Table 4.7**

*Mnemonics and Ease of Remembering Vocabulary*

Mnemonics and ease of remembering vocabulary	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	22	13	6	2	0
Percentage	51.1	30.2	13.9	4.6	0

The data shows that 81.3 % of the students agreed to the statement that using mnemonics make learning vocabulary easier, compared to 4.6% who believed otherwise. On the other hand, 13.9% of students decided to remain neutral. This means that there is a clear agreement among students about the positive effect of mnemonics on remembering new vocabulary.

The goal of statement 11 ***“Introducing new vocabulary words through Mnemonics makes it easier to master Arabic words (to acquire and retain)”*** is again to examine mnemonics and remembering vocabulary. However, in this statement the issue of retention is emphasized. Here,



17 participants responded, “strongly agreed,” 20 participants responded “agree,” and 3 participants responded “neither agree nor disagree.” 3 participants “disagreed,” while 0 participant responded “strongly disagree.”

**Table 4.8**

*Mnemonics and Mastering Arabic Vocabulary (Acquire and Retain)*

Mnemonics and mastering Arabic vocabulary (acquire & retain)	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	17	20	3	3	0
Percentage	39.5	46.5	6.9	6.9	0

The data shows that 86 % of the students agreed to the statement that using mnemonics helps to master Arabic vocabulary, retain and acquire them. This is compared to 6.9% who believed otherwise. Also 6.9% of students decided to stay neutral. The above means that the attained figures match with the previous statement where a clear majority of students agree that mnemonics help in remembering. But in addition, this statement verifies retention as an additional factor besides remembering. Results of the above two statements agree with research studies conducted in the field (Levin, 1993; Rasiban et al., 2019; Zulfa, 2019).

Statement 19 “*Mnemonics are misleading since they do not help me remember spelling and/or accurate pronunciation of targeted vocabulary*” is the negative format of the previous two statement. But this statement also looks into how students perceive the effect of mnemonics on two specific dimensions of vocabulary learning (namely spelling and pronunciation) which statement suggests mnemonics do not help with. Here, 0 participants responded, “strongly agree,” 8 participants responded that they “agree,” and 12 participants responded, “neither agree nor

disagree.” On the other hand, 18 participants responded “disagree,” while 5 participants responded “strongly disagree.”

**Table 4.9**

*Mnemonics are Misleading - Mnemonics and Problems of Spelling and/or Pronunciation*

Mnemonics and problems of spelling and/or pronunciation.	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	8	12	18	5
Percentage	0	18.6	27.9	41.8	11.6

The data shows that 53.4% of the students are against the claim that mnemonics are misleading and don’t help in remembering spelling or pronunciation compared to 18.6% who agreed. Although a majority disagrees regarding mnemonics being misleading, results are not as clear as results of previous statements in this section. In fact, 27.9% of students stayed neutral. This means that there is a considerable number of students who are either neutral or agreed with the statement that mnemonics are misleading. The fact that a relatively smaller majority agree to this statement could either indicate students do perceive mnemonics as misleading or they do not perceive it as supporting their learning of spelling and pronunciation or both. Research in the field about the benefits of mnemonics suggest the opposite of the mentioned claim that mnemonics is misleading (Levin, 1993; Rasiban et al., 2019; Zulfa, 2019). There is also research to show that mnemonics could help the learning of spelling (D. Johnson, 1993). However, the lack of enthusiasm to disagreeing to statement 19 is in line with this study participants perceptions expressed in student interviews and open-ended questions when discussing challenges of using mnemonics (to be fully discussed in the following sections). This disagreement between research

in the field and results of this study could indicate a problem in training students to use this strategy (i.e., some students were not guided to benefit from mnemonics in developing spelling and pronunciation leading to creating an impression with some students that mnemonics could be at least sometimes misleading in regard to that dimension).

Statement 20: *“Using mnemonics enhances my long-term vocabulary learning”*, again targets effectiveness of mnemonics when learning but also focuses on retention of new vocabulary. 12 participants responded, “strongly agree,” 21 participants responded “agree,” and 7 participants responded, “neither agree nor disagree.” 3 participants responded “disagree,” while 0 participant responded “strongly disagree.”

**Table 4.10**

*Mnemonics and Long-term Vocabulary Retention*

Mnemonics and long-term retention	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	12	21	7	3	0
Percentage	27.9	48.8	16.2	6.9	0

The data shows that 76.7 % of the students – which is a clear majority - supported the claim that mnemonics enhance long term vocabulary learning compared to 6.9% who believed otherwise. 16.2% of students remained neutral. This means that the attained results match with the previous three statements about the benefits of using mnemonics in learning. The results here are also supported by data gathered from open-ended questions and student interviews in the current study.

The goal of statement 21 *“I still remember words I used mnemonics to learn in previous semesters”* is to verify results of above statement namely student perceptions regarding mnemonics and long-term remembering of vocabulary (i.e., retention of learning). 13 participants responded, “strongly agree,” 15 participants responded “agree,” while 8 participants responded, “neither agree nor disagree.” On the other hand, 6 participants responded “disagree,” while 1 participant responded, “strongly disagree.”

**Table 4.11**

*Mnemonics and Long-term Retention*

Mnemonics and long-term retention	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	13	15	8	6	1
Percentage	30.2	34.8	18.6	13.9	2.3

The data shows that 65 % of the students stated that they still remember vocabulary they learned using mnemonics compared to 16.2% who believed otherwise. 18.6% of students remained neutral. Thus, results display that a majority agrees with statement. It is interesting to note that this majority is not as clear as previous statements related to remembering only (86%) or remembering and retention (76.7%). It is also worth noting that percentage of students who do not agree and who are neutral is relatively higher here than previous statements about retention (statement 20, 11, & 5). One explanation could be that unlike previous statements wording of this one refers to specific evidence of retention (remembering vocabulary learned previous semesters). This suggests that results of students’ perceptions when referring to specific evidence could differ from

those that inspect students' general impressions. Hence the importance of data gathered from qualitative instruments that allow for inspecting participants responses more closely.

Results of the above two statements targeting the benefit of mnemonics on vocabulary retention matches with results reached by researchers like Hill (2022) which indicate the positive effect of mnemonics on increasing vocabulary retention. Generally speaking, results in this section verify that, despite variation in students' level of agreement, their responses - like prevalent research in the field mentioned above – indicate they view mnemonics as having a positive effect on remembering and retaining vocabulary.

### ***5. Mnemonics in vocabulary instruction***

This section deals with statements related to study participants perceptions about how mnemonics is or could be used in vocabulary instruction and learning. It includes statements 2, 4, 7, 14, 15, 16, 18 and 19. The goal of statement 2 ***“The teacher should use Mnemonics as a strategy to learn vocabulary”*** is to examine student perceptions of importance of using mnemonics as a teaching strategy when introducing vocabulary. 15 participants responded, “strongly agree,” 24 participants responded “agree,” while 4 participants were neutral. 0 participants responded “disagree” and “strongly disagree”.

**Table 4.12**

#### *Mnemonics in Instruction of Vocabulary*

Mnemonics in instruction of vocabulary	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	15	24	4	0	0
Percentage	34.8	55.8	9.3	0	0

The data shows that 90.6 % of the students stated that teachers *should* use mnemonics to teach vocabulary compared to 0% students who believed otherwise. 9.3% of students remained neutral. This means that an overwhelming percentage of students believe that mnemonics ‘should’ be used for instruction of Arabic vocabulary. This is the highest percentage of agreement in the Likert scale statements. It suggests that despite challenges almost all students agree that it is beneficial to use this strategy to help students learn in class. This is inline with previous research. Despite the limited research done about student perceptions about using mnemonics, it does show positive perceptions on the value of mnemonics in learning new vocabulary even if not as clearly as this statement does (Tse, 2000; Breen, 2011; Amiryousefi, 2015; Azmi, Najmi, & Rouyan, 2016).

The goal of statement 4 *“Using mnemonics in class boosts appropriate usage of targeted vocabulary during communication”* is to examine students’ perception of the effect of methods of instruction that manipulate mnemonics on enhancing communication. Results point out that 25 participants responded “agree,” 11 participants responded “strongly agree,” while 5 participants responded “neither agree nor disagree.” 2 participants responded “disagree,” while 0 participant responded “strongly disagree.”

**Table 4.13***Mnemonics in Class and Appropriate Usage of Vocabulary in Communication*

Mnemonics in class and appropriate usage of vocabulary in communication	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	11	25	5	2	0
Percentage	25.5	58.1	11.6	4.6	0

The data shows that 83.6 % of the students stated that using mnemonics in class boosts appropriate vocabulary usage during communication compared to 4.6% who believed otherwise. 11.6% of students remained neutral. This means that the attained figures show a vast majority of students perceive vocabulary learning mnemonics as leading to better communication which in turn strengthens the results reached in the previous statements. Results of this statement are interesting since previous statements as well as analysis of student interviews reveal challenges regarding vocabulary learned using mnemonics in relation to spelling and pronunciation (which could negatively affect written and oral communication). An explanation of the previous results could be that certain dimensions of vocabulary knowledge (spelling and even pronunciation) are perceived by study participants as not that necessary for successful communication. It would further seem that students perceive vocabulary meaning and retention as more important for communication compared to vocabulary knowledge. This however needs to be further researched. Although it is expected that being able to retrieve vocabulary faster and more efficiently would have a positive effect on communication, no work to the researcher's knowledge has related communication to the use of mnemonics.

The goal of statement 7 *“Using Mnemonics in the classroom wastes class time”* is to inversely examine students’ perceptions of importance of mnemonics in instruction and learning of vocabulary. Here, 0 participants responded, “strongly agree,” 2 participants responded “agree,” while 7 participants responded, “neither agree nor disagree.” However, 20 participants responded “disagree,” and 14 participants responded, “strongly disagree.”

**Table 4.14**

*Mnemonics in Instructing and Vocabulary Learning (and Class Time)*

Mnemonics in instructing and vocabulary learning (and class time)	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	2	7	20	14
Percentage	0	4.6	16.2	46.5	32.5

The data shows that 79% of the students were against statement stipulating that using mnemonics in the classroom wastes class time compared to 4.6% who believed otherwise. 16.2% of students remained neutral. Thus, the attained figures point out that a vast majority find that using class time to train students to use mnemonics is in fact a good investment of class time. Such results verify results reached in previous statements regarding student perceptions of the value of using mnemonics in class. It also matches with what researchers stipulate regarding the importance of using class time to train students to successfully use learning strategies (Brown, 2015). Furthermore, it matches with data gathered from students’ open-ended questions and interviews that reveal study participants’ agreement to the need to be trained in class to use mnemonics.



The goal of statement 14 *“I find mnemonics confusing”* is to detect possible negative perceptions of mnemonics. Thus, this statement comes to verify and complement results reached by the previous statement. This is important since it contributes to researcher attempts to understand students’ perceptions of challenges pertaining to usage of mnemonics. Results of this statement reveal that 0 participants responded, “strongly agree,” 4 participants responded “agree,” while 7 participants responded, “neither agree nor disagree.” 21 participants responded “disagree,” and 11 participants responded, “strongly disagree.”

**Table 4.15**

*Mnemonics in Instructing and Vocabulary Larning (Confusing)*

Mnemonics in instructing and vocabulary learning (confusing)	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	4	7	21	11
Percentage	0	9.3	16.2	48.8	25.5

The data shows that 9.3% agreed with this negative statement while 74.3% are against it. 16.2% of students remained neutral. Results indicate that a clear majority of students do not find mnemonics confusing. This is important since study interviews show some comments that reveal certain conditions under which mnemonics could be confusing. Results here support results reached in previous statements about the generally positive perceptions about mnemonics as a strategy for teaching and learning vocabulary. It is interesting however that level of positivity here is much higher than statement 19 that suggests mnemonics could be misleading (*“Mnemonics are misleading since they do not help me remember spelling and/or accurate pronunciation of*

*targeted vocabulary*”). Though researcher expected that statements about mnemonics being confusing, and being misleading would render the same results, however, it seems that mentioning of specific aspects that might lead mnemonics to be misleading in statement 19 (spelling and pronunciation) has led level of rejection of statement 19 to be lower (53.6%) compared to level of rejection of the current rather general negative statement (74.3%). These responds suggest that study participants do not blatantly reject mnemonics as confusing, but they do not deny either that it is not beneficial when it comes to spelling and pronunciation.

The goal of statement 15 *“Drill and kill practice is the best way to learn vocabulary”* is to examine students’ perceptions of traditional methods of teaching and learning vocabulary. It is important to note that statement includes a comparative term (‘best’) that suggests comparing Drill and kill practices to mnemonics and all other practices for learning vocabulary. According to (yourdictionary.com), drill and kill is “a teaching technique in which students are repeatedly drilled on the same material”. Results about this traditional form of learning indicate that 15 participants responded “agree,” while 0 participants responded, “strongly agree” and 18 participants were neutral. 6 participants responded “disagree,” while 4 participants responded, “strongly disagree.”

**Table 4.16**

*Drill and Kill for Learning Vocab*

Drill and kill for learning vocab	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	15	18	6	4
Percentage	0	34.8	41.8	13.9	9.3

The data shows that surprisingly 34.8 % of the students supported that drill and kill practice is the **best** way to learn vocabulary which is a considerable percentage of students compared to 23.2% who are against that. Furthermore, a relatively big percentage of respondents – namely 41.8% - remained neutral (i.e., more than those who agreed or disagreed to the statement). This suggests that despite the high support for usage of mnemonics to learn new vocabulary, the majority are either neutral towards using usage of traditional practices for vocab learning (the clearest majority here) or support it. Results therefore add to the complexity of the general picture of how students relate usage of mnemonics to other classroom practices for learning vocabulary by showing that a considerable body of students do not mind or actually approve of traditional vocabulary learning practices. This could be the result of the predominant culture of learning in the institution students are learning Arabic.

The goal of statement 16 “***When it comes to vocabulary learning a vocabulary list is all I need***” is again to examine students’ perceptions of traditional methods of teaching and learning vocabulary using a strong statement which suggest excluding all other practices for learning vocabulary (‘***all I need***’). Here 5 participants responded “agree,” 1 participant responded “strongly agree,” while 17 participants responded “neither agree nor disagree.” 14 participants responded “disagree,” while 6 participant responded “strongly disagree.”

**Table 4.17***Vocab Lists for Learning New Vocab*

Vocab lists for learning new vocab	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	1	5	17	14	6
Percentage	2.3	11.6	39.5	32.5	13.9

The data shows that 13.9 % of the students agreed with that statement compared to 46.4% who believed otherwise. 39.5% of students remained neutral. Though statement shows that a relatively big percentage of respondents do not agree with *solely* depending on traditional vocab learning, the percentage is below 50. Furthermore, a considerable percentage (close to those who reject) are neutral to such a practice (39.5%). Thus, the results of the above two statements (15 & 16) suggest that preference of mnemonics does not exclude usage of more traditional methods of learning vocabulary. This could be the result of traditional methods of assessment that do not emphasize communication (since students have mentioned that mnemonics boosts communication). However, it could also mean that students cannot rely only on mnemonics for learning vocabulary at the expense of other methods of learning however traditional they may be.

The results of the results of the above two statements could also be caused by students' experiences with using mnemonics as compared to using traditional methods of learning vocabulary with the latter leading to better results. This would not be strange since at least one study the researcher is aware of indicated that learners when asked about it voted they like their 'own techniques' as compared to using mnemonics (Behr, 2012). Further research is therefore needed to understand student perceptions of effectiveness of traditional vs. less traditional practices of vocabulary learning in the classroom.

The goal of statement 18 *“I love the challenge of making up Mnemonics on my own while learning vocabulary”* is to examine the extent to which students are enthusiastic about using mnemonics in instruction and vocabulary learning despite challenges related to forming them (difficulty of finding links, it is a time-consuming technique, etc.) which participants mention in gathered qualitative data. 15 participants responded “agree,” while 9 participants responded, “neither agree nor disagree,” and 9 participants responded, “strongly agree.” 6 participants responded “disagree,” and 4 participants responded “strongly disagree.”

**Table 4.18**

*Challenge of Making up Mnemonics*

Challenge of making up mnemonics	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	9	15	9	6	4
Percentage	20.9	34.8	20.9	13.9	9.3

The data shows that 55.7 % of the students agreed with the statement while 23.2% believed otherwise. 20.9% of students remained neutral which is a considerable number of students. The above suggests that though a majority indicate they *‘love’* challenges of creating mnemonics, such majority is not as clear as previous statements; this suggests that a considerable majority (even if not an overwhelming one) seem totally committed to (i.e., love) using this strategy despite challenges.

## ***6. Using Mnemonics in Class Specifically During First Encounter with Vocabulary Item***

Statements that represent this section are 1, 8, 11, and 12. This section is important because the first-time students encounter a new vocabulary is usually the most difficult and the one that could lead to high levels of anxiety. It is therefore necessary to use a pedagogical instrument that successfully address this aspect. Mnemonics is one of such instruments as suggested by researchers in the field (Arnold, 1999; Horwitz, 2010; R. L. Oxford, 1990).

The goal of statement 1 ***“The teacher should use Mnemonics to introduce vocabulary for the first time”*** is to examine mnemonics for introducing vocabulary for the first time in class. 19 participants responded “agree,” 7 participants responded, “neither agree nor disagree,” while 15 participants responded, “strongly agree.” 1 participant responded “disagree,” and 1 participant responded, “strongly disagree.”

**Table 4.19**

*Mnemonics for Introducing Vocabulary for the First Time in Class*

Mnemonics for introducing vocabulary for the first in class	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	15	19	7	1	1
Percentage	34.8	44.1	16.2	2.3	2.3

Again, a clear majority agrees to this statement. The figures shows that 78.9% agreed about that statement compared to 4.6% who believed otherwise. 16.2% of students remained neutral. This means that most respondents are for using mnemonics when initiating the process of learning a new vocabulary. It also suggests that students perceive using mnemonics as having a positive effect on the usually difficult first encounter with new vocabulary. Result here would

agree with what students have pointed out in interviews. Thus, results here are in line with the above-mentioned research.

The goal of statement 8 *“Mnemonics are not an effective way to introduce new vocabulary words in a new lesson”* is to re-examine students’ perceptions about the same issue introduced in the previous statement but in a negative sense to verify results reached. Results indicate 3 participants responded “agree,” 2 participants responded, “neither agreed nor disagree,” and 0 participants responded “strongly agree.” On the other hand, 22 participants responded “disagree,” and 16 participants responded, “strongly disagree.”

**Table 4.20**

*Mnemonics for Introducing Vocabulary for the First Time in Class*

Mnemonics for introducing vocabulary for the first in class	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	3	2	22	16
Percentage	0	6.9	4.6	51.1	37.2

The figures shows that 6.9% agreed to this negative statement compared to 88.3% who believed otherwise. 4.6% of students remained neutral. This means that there is a clear majority who consider that mnemonics are in fact effective for introducing new vocabulary in class. Thus, results here further verify the results reached by previous statement.

The goal of statement 12 *“I don’t like Mnemonics, but I use them as the teacher presents them in class”* is to further inspect student perceptions of reasons why they use mnemonics. One

of those reasons could be that teacher is using them in class despite their dislike of it. Thus, this statement examines whether students perceive usage of mnemonics as a method of instruction forced on them. Here, 3 participants responded “agree,” 10 participants responded, “neither agree nor disagree,” and 0 participants responded, “strongly agree.” 19 participants responded “disagree,” and 11 participants responded, “strongly disagree.”

**Table 4.21**

*Usage despite dislike of mnemonics*

Usage despite dislike of mnemonics	Strongly agree	Agree	Neutral	disagree	Strongly disagree
Number of subjects	0	3	10	19	11
Percentage	0	6.9	23.2	44.1	25.5

The figures shows that 6.9% agreed about that statement compared to 69.6% who disagreed. 23.2% of students remained neutral. This means that there is a clear majority who disagree about that previously mentioned statement. It also means that the majority of respondents are not using this strategy only because it is forced upon them by their teachers. It is interesting to note however that the percentage of neutral responses suggests that a considerable number of students are undecided. This noticeable percentage of neutral responses could be explained on the bases of challenges that students suggest they face when using mnemonics. Thus, results in this section reveal that students perceive mnemonics as a useful device for learning newly introduced vocabulary.

In conclusion, it would seem that student perceptions as indicated by Likert scale statements are generally in line with current research about the positive effect of mnemonics on



remembering and retaining vocabulary (and therefore should be used for learning and teaching); also that they are useful for learning and introducing new vocabulary in class, that they are useful for enhancing vocabulary use during communication, and that students are at ease when using them; and that they are fun to use. Respondents also perceive this strategy as motivating (but with a less clear majority compared to the previous statements). Statements that students agreed to but did not reveal a 50% majority are relating to mnemonics reducing anxiety, and that they are useful for exam revisions.

Results that address challenges of learning vocabulary using mnemonics suggest that a clear majority do not find mnemonics confusing but that some students (not a majority) do find mnemonics as not helpful when it comes to learning pronunciation and spelling (this will be further discussed in coming sections) and that challenges of creating mnemonics are not discouraging to learners (a majority are enthusiastic about using mnemonics despite challenges of creating them). Finally, a considerable majority of students are either neutral to using traditional methods of learning vocabulary or for using traditional methods of learning vocabulary.

#### ***4.1.2. Data Gathered from Open-ended Questions About Students' Perceptions Regarding Effectiveness of Mnemonics in Boosting Learning***

In order to further inspect student perceptions about effectiveness of mnemonics the following open-ended questions were added to study questionnaire. In the following sections of the results themes detected under each of the open-ended questions will be discussed. Each question will be stated and then themes that fall under it will be discussed.

#### ***4.1.2.1. Effectiveness of Mnemonics.***

This section looks into themes indicated by question 5 of the questionnaire which reads as follows ***“According to the definition of mnemonics mentioned, do you think Mnemonics boosts AFL vocabulary acquisition and retention in the Arabic classroom? Why? (Please explain your idea as much as possible)”***

Data collected from this question reveals the following themes that relate to students’ perceptions about effectiveness of mnemonics. The major theme detected here is that ***mnemonics is an effective vocabulary learning strategy***. Some attributed this to the fact that mnemonics are interactive and fun. In the participants' own expressions one mentioned that mnemonics “could help learn in an interactive way” and another participant said that mnemonics are “interactive and fun.” A third participant explained that mnemonics “it also makes studying more fun!” This theme supports results reached by Likert scale statements.

Some respondents attributed the positive effect of mnemonics to ***making remembering easier***, especially that they came from language backgrounds that have little similarity to Arabic, making the language more difficult. Using the original utterances of the informants, one participant added that” for Europeans, the languages they know have little in common with Arabic, so it is really difficult to remember both consular and grammar.” Another participant said “learning Arabic is harder than learning a language like English, French or German (for Dutch people). Due to the different alphabet, letters and sounds. Mnemonics is very important to remember Arabic words and grammar” a third participant stated “Yes [it boosts learning], especially for students with no background knowledge in Arabic or other Semitic languages”.

The above two themes agree with most research in the field, for example Kayaalti (2018), Kurniarahman (2023), Thảo (2022) and many others already mentioned in this study. Other

students focused on *reasons why mnemonics make remembering easy*. For example, one indicates that “memory functions well when there are some associations that are personal to each student and thus let remember much easier,” another suggests that it “creates a singular ‘story’ to this vocabulary item: the new word is not just one among many other in a list but gains ‘personality’ or ‘singularity’ and so becomes easier to remember.” A third participant commented that mnemonics “creates connections between words in someone's head. As a result, everyone makes personal connections and memorizes words much more easily.”

Another theme that subjects focused on is the *positive effect mnemonics have on vocabulary retention*. One participant affirmed “the words I memorised with mnemonics; I still remember to this day”. Another participant replied that “memorising through mnemonics will provide a long-term memorization of vocabulary, therefore you will remember the vocabulary also after the exam” a fourth participant contended that mnemonics “will help you to remember the words for a longer time”. This clearly agrees with results reached by Hill (2022) whose research specifically inspected retention and showed an increase in rate of retained vocabulary as a result of using mnemonics. It has to be mentioned here, however, that some research has indicated that learners ‘own techniques’ could have better results when compared to using mnemonics (Behr, 2012).

Other students asserted that mnemonics help learning because they are *motivating and enhance their confidence*. According to these respondents' mnemonics “make it less scary and keeps motivation up” another participant asserted that mnemonics “strengthens the students' confidence”. This theme reiterates results of the Likert scale section as well as results reached by researchers like Kayaalti (2018).

A third theme detected under this question however is the *challenges of using and/or learning to use mnemonics*. Reasons for the above include its being confusing, not always usable, and beneficial only during the early phase of learning. In accordance with the respondents' phrasing one participant indicated "If your first foreign language is Arabic, mnemonics are of huge help. However, if it is your second or third foreign language, there are just too many words in your head in different languages and relating these foreign words to each other will cause you to confuse their respective meanings". A second participant stated, "The key-word method confuses me". Another participant explained that "when reading becomes easier, I don't think (or at least not for me) mnemonics work very well. At that point it often confuses me as I relied more on the memorization of the mnemonic instead of the actual writing and pronunciation". Another commented "it is not possible in my opinion to learn everything or the whole vocab list by mnemonics". The above student responses show that though many have a positive stance of mnemonics there are challenges that need to be addressed.

In conclusion, the above responses to this question are generally in line with Likert scale responses and research in the field that emphasise the generally positive results regarding mnemonics and remembering as well as retaining of learned vocabulary. Other positive factors related to learning using mnemonics where both types of data agree are personalization of learning and making it interactive and fun. It is interesting that results here about the effect of mnemonics on reducing anxiety and enhancing confidence are clearer compared to results about anxiety in Likert scale questions and therefore more in line with what researchers like Arnold (1999), Horwitz, (2010); Oxford (1990) suggest.

The most informative part here is the description of how and why mnemonics could confuse learners (mixing words from different languages, difficulty of learning pronunciation and

spelling using mnemonics, difficulty of creating mnemonics at times, and time needed to create mnemonics). Expressed opinions here are more in line with results of statement 19 in Likert scale questions about how problems related to spelling and pronunciation could make mnemonics misleading (to which approximately 47% of respondents agreed). Thảo study results suggests his subjects were facing difficulties related to using mnemonics similar to those mentioned above (Thảo, 2022).

#### ***4.1.2.2. Mnemonics' Effectiveness in Relation to Exam Revisions***

This section addresses the following open-ended question used in the survey ***“In preparation for an exam, would you use mnemonics to remember vocabulary words? Why/ Why not?”*** Since exams are the main means for evaluation of student performance in AFL classes students are registered in, preparing for them is extremely important for students. The same question has been addressed in Likert scale by more than one statement. Asking students, in more than one format, about their learning preferences in this important and stressful phase of their learning (exams), is expected to be revealing. Data collected from this question indicates, that students have variant perspectives with regard to mnemonics preference in relation to exam revisions. Student responses could be divided into three types, one focuses on encouraging using mnemonics for exam revisions and reasons for that, while the other focuses on responses that does NOT encourage using mnemonics for exam revisions and reasons for that; the third type are response that suggest ‘sometimes’ using those techniques for exam revision and reasons for using/not using it.

Those who ***would use mnemonics for exam preparation*** considered the following factors as influencing their choice:

- Difficulty of the word: Examples of students' responses are "yes, if the word was hard and complex to remember, and the association came naturally," and "yes I would, because that helps me to remember more words, even under pressure."
- Ease of remembering a word or a big number of words that must be learned: Examples of students' responses are "Yes I would, because that helps me to remember more words, even under pressure."
- Mnemonics lead to learning fast, hence are time efficient: Examples of students' responses are "Yes. It makes study time more effective and efficient"; "Yes I would, because that helps me to remember more words, even under pressure."
- Ease of activation, retention, and retrieval during communication: Examples of students' responses are "“Yes because I can activate it easier”; “Yes, since it helps you to improve your skills in a way that you can use them in real life conversations”".
- Encouraging learner to do the job: Examples of students' responses are "Yes, because it helps me to trick myself into learning new vocabulary."

Thus, like students in Thảo (2022) study, students here find mnemonics useful when learning especially under exam stress. Some responses on the other hand indicate that respondents **would NOT use the mentioned technique under exam pressure**. Their reasons are:

- Fear of remembering the connection to the word but not the word itself during the exam: "I would use Mnemonics during the semester but not leading up to an exam, as I believe it to work best for the long term. If I come up with the connections right before the exam, I would be able to remember the connection I had with it but not the actual meaning of the word."

- Confusion (you should have already established link and capable of remembering the word before the exam): “Maybe not, it could be confusing before the exam. Mnemonics are more useful to immediately link the word and establish a relation to better remember it. Afterwards it will become automatic to remember the word, so you shouldn’t need the link anymore.” ; “Probably not, I can study just fine using a vocab list”; “No, mnemonics become confusing, and one should focus on context and hands-on learning, e.g., asking for a glass of water which is an everyday situation instead of making up mnemonics for difficult and abstract words like "community", or "United Nations". However, for students who have never learned a foreign language before they can be useful, but after the first foreign language I feel that mnemonics are of not much use”.

- Preference of traditional methods (vocab lists): “Probably not, I can study just fine using a vocab list”; “No, mnemonics become confusing, and one should focus on context and hands-on learning, e.g., asking for a glass of water which is an everyday situation instead of making up mnemonics for difficult and abstract words like ‘community’, or ‘United Nations’. However, for students who have never learned a foreign language before they can be useful, but after the first foreign language I feel that mnemonics are of not much use”; “No. In preparation for an exam a vocabulary list helps me the most”.

Students here reiterate challenges of learning using vocabulary previously mentioned. However, being under the stress of an exam makes such challenges become more evident to them. It is also interesting that problems of usage or training are highlighted here in students’ explanations of why they would avoid mnemonics in exams (“If I come up with the connections right before the exam, I would be able to remember the connection I had with it but not the actual meaning of the word”).

Students who would *sometimes use mnemonics or use it under certain conditions* give the following reasons:

- Though it is a good technique in general, other or more traditional practices may be used before the exam: “Yes, but the day before the exam I will just use drills to check my memory.”; “Yes. Because it works for me, but it does not work for every words so sometimes I still have to use drill and kill”.
- Absence of clear connections: “Sometimes, if it’s a word that doesn’t stick. But if there’s no clear connection, I usually just drill.”; “I would but I never think of doing it because I only do it for some when there is an “obvious connection to make”.
- If it is possible to make it funny or fun (songs): “Sometimes. Most times me and my friends would try to make it funny, memorizing the vocabs through associating with English and making songs to the vocab.”
- It is not helpful with spelling: “yes but not exclusively because while they do help with memorizing, they don't take into account spelling so I also work with lists”

The above suggests that some students would resort to mnemonics to deal with exam pressure (time, need to remember a big number of words etc). A factor that decides whether mnemonics will be used under pressure or not however, is difficulty of word, ease of establishing association with previous knowledge, proficiency level, whether students have already learned and already capable of remembering word or not, fun that could be achieved from the process which encourages performing the job. Students would resort to traditional techniques for learning vocab before exam if they were uncomfortable using mnemonics under pressure, if they fear confusion



before the exam, and if they prefer traditional methods. Thus, though mnemonics is generally regarded by most as useful, under exam pressure a considerable number of students would prefer more traditional methods of vocab revision (though still not all). It is interesting to note here that some of research done on mnemonics, for example study of Kayaaltı (2018), is done with the goal of helping learners deal with exam situations. Further research is therefore needed to specifically look into student perceptions of using mnemonics to review for an exam, reasons for it and its effect. The mentioned results support results reached in Likert scale section in relation to using mnemonics to review before an exam. It also explains and verifies the tendency towards traditional methods of learning vocabulary like use of vocabulary lists presented in that section.

#### ***4.1.2.3. Interview Data Regarding Effectiveness and Challenges of Using Mnemonics***

This section inspects themes gathered from data made available to researcher by interviews conducted with 5 of study subjects. Interview questions could be found in the study appendix II, p.113. The researcher organized the qualitative data collected from interview questions into the following themes.

***1- Mnemonics as a means for facilitating learning and remembering:*** Interviewees seem to favour mnemonics as strategy in the AFL vocabulary learning. This is emphasized by the multiplicity of sentences that suggest this advantage of using mnemonics. It is interesting to note how some statements suggests the power of mnemonics in short and long-term remembering (“it also allows you to use your long-term memory rather than short term one where you will only learn the vocabulary for the test and then the day after the test forget all about it”). Others, however, relate it to short term attempts **to remember only** (“mnemonics help me to learn and remember them at first and then I would remember them without mnemonics.”). In this quotation student

suggests that mnemonics is only used as an initial tool for launching memory traces that could help learner retrieve word but once this happens then learner has no further use for mnemonics. It is also interesting to note how students' statements relate between mnemonics and factors like speed ("It goes a lot faster and it doesn't take much time"), ease ("mnemonics makes me remember the word more easily") and efficiency ("when we had to learn a lot of words so it really help me to kind of remember like all of them without also having confusion in my mind"). Ease however is the factor that is emphasized most when discussing the value of mnemonics. The emphasis on mnemonics role in helping students remember new words matches with what they mentioned in their open-ended questions in which a clear majority of students indicate that mnemonics facilitate learning and remembering in general, and few students affirmed the long-term remembering. The above is in line with results of researchers like (Mastropieri & Scruggs, 1989) Mastropieri and Scruggs (1989), who suggest that his subjects learning and grades have been significantly enhanced when using mnemonics compared to when not using them.

**2- *Mnemonics as a fun and entertaining learning strategy*:** This is also mentioned by several interviewees ("it is also fun it makes the language become a little bit like a game and it is also good for your imagination").

**3- *Mnemonics encourages creativity*:** Though this is not clearly mentioned by interviewees, it is underlined in their statements. For example, students' description of the process of relating new word to something they knew highlight the creativity involved in this process ("I would listen to the sounds of the words, and I connect it to something that I think is funny or to something that I can create a story with."). The extent to which they would go to find or establish necessary relationships as described by one interviewee also stands as evidence of students' creativity and resourcefulness (So then I split the words up. sometimes I use like either half of

Dutch word so it looks like the Arabic word or I use two Dutch words combined so it looks like the Arabic word, so I split and swing things up and some examples. It really depends on the word because you can't use the same system on every word. Sometimes it's easier to split it up, sometimes to go one-on-one. Sometimes you get it in an entire sentence and use that then so). Some comments clearly relate between the use of mnemonics and the need to be creative (It's Improvise, improvise every case by case which one works best.). Statements such as these indicate that creativity is a must when using mnemonics. Research also indicates the relationship between mnemonics (especially visual) and creativity (Cioca & Nerişanu, 2020).

***4- Value of Mnemonics for learners from non-Semantic languages like Arabic:*** There are several references in student interviews to the value of mnemonics when it comes to learning Arabic with its different features compared to other Indo-European languages that students are familiar with. This further explains the references to the value of mnemonics for beginners who in the case of this study belong to and have only studied Indo European languages. Though not clearly stated by interviewees, student statements suggest that using mnemonics reduce learner anxiety that results from confronting a totally new language system. In statements like the following “I feel like at the beginning it can be a bit like I get lost because I used to study languages were kind of connected to Italian so I could recognize some words, some words were similar. and for Arabic everything was just new, and I cannot find kind of connection”. It is easy to note the underlying tone of stress and anxiety that results from encountering something that is so new. In such conditions using mnemonics and the facilitating learning factors it entails (discussed above) would be an important way to reduce such negative feelings.

***5- Mnemonics promotes group creativity and cooperative learning:*** Student comments also point at how using mnemonics could promote cooperative learning when they do study in

groups to find necessary associations with targeted vocab (“fun experience that you can do with other people”; “I would study with a classmate of mine, and we also would help each other finding mnemonics and find corelated word in different languages and that really helped me”). This is another positive aspect of learning when using mnemonics which does not seem to result from the tool itself (since mnemonics could be created and used individually) but from the positive learning environment it has the potential to create. This is demonstrated by Sudirman and Tawali (2023) whose study results indicated that using group work when utilizing mnemonics had a positive effect on students’ learning and motivation.

**6- Mnemonics as a personalized activity:** The majority indicated the idea that there is no ‘one size fits all’ use of mnemonics. Based on preferred type of mnemonics, students’ learning style and on the targeted word, every student tries to personalize how this tool is used to fit their own needs. This suggests the importance of exposing students to different types of mnemonics and letting them choose what works best for them. It also shows the positive effect of personalized learning and how the creation of relations between targeted words and other aspects of learners’ life and knowledge makes learners feel a kind of ownership of the newly acquired knowledge (“it make you feel more like yours. You make sense of the language in your own way”). These students consider a positive aspect in learning using mnemonics (“the good thing about mnemonics you kind of can personalize it how you want because it should suit you and your learning method”). This reaffirms the findings related to Hagino (2002) who stated that a student tends to use group of strategies and personalize them to their own learning experiences. Learners customize strategies according to the learning situations, the teaching methods, and targeted tasks they encounter.

**7- Effect of strategy training: Interviews revealed the positive effect of strategy training in class:** To begin with, comments indicate that students were ignorant of mnemonics as a learning

strategy until they were introduced to it in their Arabic class (“my teacher back then from the first year introduced me to this strategy”). After this initial training/introduction to this learning strategy, many continued to use this strategy in their learning (“in the first year of studying International Studies I was introduced to mnemonics, and I started using them ever since”; “I didn’t know It was tactic. I never learned it that way, but in university I learned it and it help me ever since”). This asserts the importance of training students to new learning strategies to enhance their learning experience and help them become autonomous learners who can study and develop their language on their own. Importance of strategy training has been emphasised by a long line of research that extends back to the 70s. Researchers who highlighted the importance of strategy training include, but are not limited to Oxford (1990), Teng (2023), and Nunan (1991).

**8- Challenges:** There are important challenges when using mnemonics that students are keen to describe. At the phase of *creating mnemonics*, interviews suggest that there is difficulty sometimes in finding links between some new words and other words they know (“when the meaning is kind of similar too that’s best-case scenario but then sometimes words aren’t that easy to connect with the word from your native language.”).

At the phase of *retrieval of learned vocabulary* there is the challenge of remembering word meaning. Students’ comments highlight that though they could remember the link they created they could not remember the meaning associated with the link (“could be misleading because you remember your personal link that you did but you don’t remember what does it mean”). Using mnemonics also does not help remembering the word’s spelling (“And when I had to do the spelling sometimes, I might make some mistakes because I don’t remember the exact spelling”). Challenges are also related to retrieval during exam situations or being under stress (“I think during an exam sometimes with the stress and everything I remember the link of the word, but I didn’t

remember the meaning”). It is worth noting here that challenges that student relate to using mnemonics are also related by students to inefficient application of this learning strategy (“sometimes the words are quite similar, and I use the same connection for them which could be confusing at the end”; “so I did it like the morning before the test when I was in the test I was able to remember my connections but I couldn’t remember the actual meaning of the word”; “When time is short, mnemonics I don’t think is the way to go. But when you have time it's the best”; “yes if you don’t have time to practice and you only do it once. It doesn't work for me”). This indicates that the mentioned challenges, especially those related to retrieval, are more relevant to problems in application of strategy not the strategy itself. The importance of training is alluded to by Thảo (2022) who indicates that students must have the patience needed to master this learning strategy through knowledge and training “In the first attempt to use mnemonics, students may encounter lots of challenges because they have to both remember the usage of mnemonic strategies and the vocabulary at the same time. However, once all the mnemonic strategies are fully understood, the time of learning vocabulary will be shortened” (p. 180).

The above themes are generally in line with results of questionnaire Likert scale and open-ended questions. This is especially clear when it comes to results pertaining to remembering and retention of words learned using mnemonics as well as mnemonics being a fun way to learn. It is important to add here that when students were given freedom to respond openly, students presented new explanations of why mnemonics is a preferred strategy for learning new vocabulary that were not addressed by Likert scale statements. These include creativeness and improvisation required for creation of mnemonics, how mnemonics encourage group work, the positive effect of the strategy training students received to learn how to use mnemonics, personalized nature of

mnemonics as a strategy of learning and the importance of helping students detect the type, they find most beneficial for them, and the value of mnemonics to learners of non-Semantic origin. This further proves the importance of qualitative data in this type of research.

Challenges of using mnemonics during learning is a revealing part of data gathered through interviews. As mentioned in previous paragraph, interviewees' comments highlight how challenges faced when using mnemonics could be attributed to difficulty of creating mnemonics and the time this process consumes as well as retrieval problems. But more interesting is the fact that such problems could be attributed to unsuccessful application of mnemonics (for example, creating mnemonics but not practicing them enough) or inadequate strategy training (i.e., training students to use targeted learning strategy in a manner that would render best results). It is also interesting to see an explanation of why mnemonics may not be students' favoured form of revision before exams as indicated by Likert scale statements which is explained by all creation and retrieval problems described by interviewees and open-ended question about this topic. Interviews' data therefore complement results reached by Likert; while the former suggested the challenges the latter suggested their reason from students' perspectives.

## **4.2. What are Students' Perceptions About the Most Useful Mnemonic Strategies for Learning Arabic Vocab?**

### ***4.2.1. Survey Close-ended/multiple Choice Questions About Students' Preferred Type of Mnemonics***

The second research question explores respondents' preference regarding types of mnemonics by offering types of mnemonic strategies and requesting that subjects specify their

level of preference of targeted strategy. This issue is important since it would help teachers and material developers specify students' preferred tendencies in learning of vocabulary using mnemonics.

#### ***A. Verbal Mnemonics***

Out of the total number (43) of participants;

- 23 participants chose **verbal mnemonics** as their “preferred” type,
- 17 indicated it is “most preferred”
- 3 answered it is “not preferred”.

**Table 4.22**

*Frequency of Preference of Verbal Mnemonics*

Mnemonics type	Preferred	Most preferred	Not preferred	Neutral
Verbal mnemonics	23	17	3	0
Percentage	53.4	39.5	6.9	0

#### ***B. Visual Mnemonics***

Out of the available number (43) of respondents:

- 6 out of the 43 respondents answered that **visual mnemonics** was “preferred”
- 6 chose “most preferred”
- 11 mentioned “not preferred”
- 20 participants remained “neutral”



**Table 4.23***Frequency of Preference of Visual Mnemonics*

Mnemonics type	Preferred	Most preferred	Not preferred	Neutral
Visual mnemonics	0	6	11	20
Percentage	0	13.9	25.5	46.5

***C. Key-word Method***

Out of the recruited number of participants (43),

- 11 participants declared that **key-word method** mnemonics as “preferred”
- 20 participants selected “most preferred”
- 4 participants chose “not preferred.”
- 8 participants remained “neutral.”

**Table 4.24***Frequency of Preference of Keyword Mnemonics*

Mnemonics type	Preferred	Most preferred	Not preferred	Neutral
Key-word mnemonics	11	20	4	8
Percentage	25.5	46.5	9.3	18.6

Hence, close-ended section of the questionnaire that has multiple choice questions about student preferred mnemonic strategies shows that the most favoured types of mnemonics by this group of learners are the verbal and the key-word methods which were preferred by 93% and 73% of subjects respectively. To further investigate AFL students' perceptions about mnemonics, the questionnaire contained a few open-ended questions that target providing a complete picture of the students' perceptions about their preferred mnemonic strategies and to clarify any vagueness that could exist within the close-ended questions' responses.

#### ***4.2.2. Open-ended Question About Student Preferred Mnemonic Strategies***

##### ***4.2.2.1. Student Description of Their Preferred Types of Mnemonic Strategies***

In an attempt to learn more about student preferred mnemonic strategies and to ensure that student responses are well validated, students were asked about their *preferred mnemonic strategies plus a request to "specify and explain giving examples"*. Data gathered from this question reveals the following themes related to students' mnemonics preference. To begin with the type of mnemonics that students seem to rely on most is specifically verbal. Students indicate here their reliance on native language for forming associations and to a lesser extent languages other than native language. Key word is also referred to by some students. In addition, visual mnemonics was mentioned but to a much lesser extent.

To conclude, both close-ended questions and students' open-ended questions in this study indicate the same results namely that students prefer verbal and key-word strategies and visual to a lesser extent. Research about student preferences when it comes to type of mnemonics seems highly controversial however especially in relation to key-word mnemonics. In this study it would seem that verbal and keyword is the most preferred. However, there is research to show a different

picture. For example, some researchers like Kurniarahman (2023) assert student preference of the mentioned types are the same as ones mentioned by this study, while other researchers like Campos, Gonzalez & Amor (2003) indicate that key-word strategy did not lead to positive effects on learning (compared to rote memorization). Furthermore, contrary to the current study, Thảo, (2022) indicates that students tend to use visual mnemonics more than verbal mnemonics. The above-mentioned variation in research results indicates the need for further research.

In addition to specifying types of mnemonic strategies, it is interesting to note that analysis of open-ended questions about preferred mnemonic strategies revealed that many students tend to use creative ideas for associating new words to previous knowledge (please check student suggested techniques in the below table). This in and by itself reflects the high levels of personalization and creativity that creation of mnemonics involves, which are also indicated in open-ended questions and interview responses. The most important suggested mnemonic technique in researcher's opinion is the described reliance on word etymology and root. This is especially important in the case of Arabic language since it indicates a familiarity with one of this language's distinguishing features compared to other Indo-European languages. It is also interesting that learners show awareness of similarity between Arabic and other sematic languages in regard to etymology and roots. This suggests the value of knowledge of how the language works in general in developing useful association techniques which mnemonics is all about.

Other fun and creative techniques that students have suggested in their responses are ones about creating songs and creating new words from the first letter of a number of words they need to learn. The above emphasizes how training students to use mnemonics as a form of association for creating memory links but giving them the freedom to create their own techniques (rather than

forcing on learners' specific vocabulary learning strategies even if these are mnemonic strategies) can enhance learning as well as encourage student creativity and encourage autonomy of learning.

**Table 4.25**

*Creative Ideas for Associating New Words to Previous Knowledge*

Student suggested techniques	<ol style="list-style-type: none"> <li>1- "abbreviations with letters for a list of words" Like memorizing the first letter of five different words and using each letter to form a word to gather all of them</li> <li>2- "Look at the root of the word and see which words are similar</li> <li>3- "Roots and etymological connections to words in other languages (Spanish, French) or to other previously learnt words in Arabic"</li> <li>4- I'm not sure whether this concerns mnemonics, but I often look up related words and etymology for semilair languages such as Hebrew and Aramaic."</li> <li>5- "Perhaps the relation to a different Arabic word"</li> <li>6- "Other techniques can rely on the musicality of some words, e.g., through actual (existing or 'made-up') songs."</li> </ol>
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**4.2.2.2. The Type of Strategies Students Would Prefer to Use in Class**

In an attempt to detect what type of mnemonic strategies students would like their teachers to use in class they were asked the following question ***"What types of Mnemonics do you/would you like to use in your Arabic classroom to learn vocabulary?"*** This question specifically aims at detecting type/s of mnemonics students like to use in class. The fact that it is an open-ended question has encouraged students to add information not just list of targeted strategies. Like the previous question the main choices made arranged from the ones they would most like to use in

class are as follows: **verbal mnemonics; the Key-word method; and visual mnemonics**. Thus, results here verify results reached by close-ended questions about the same topic. It is interesting to note that in answering this open-ended question respondents emphasized the need for teachers to use *more than one type or more than one strategy of the same type of mnemonics*. For example, one subject suggests “I really like the assimilation with words from other languages, as well as the 'scenario' mnemonics”; another mentions “Associate words with bizarre imagery or with native language words” indicating that both are feasible depending on which works better. It is also interesting that some statements encourage making mnemonics a personal choice or a personalized process which supports perceptions expressed in interviews. In these statements students emphasize the importance of making use of **what works for learners** or having learners pick what works for them. For example, one student suggested that “each student should find the mnemonics techniques that best suit them” and another respondent indicates that “at the end the students have to be able to find what work for them.” Data collected from this question also indicates that students preferred that teachers rely on interactive activities for introducing vocabulary in class including mnemonics as opposed to more traditional teacher practices. For example, one subject mentions “My third teacher made us repeat words in class, mainly using PowerPoints with images. As with my second teacher, this wasn't very efficient because we had not memorized the words properly”.

Students' responses indicate several benefits of using mnemonics. For example, responses highlighted the resulting motivation and making learning fun (“My first teacher used mnemonics, and that is what personally worked best for me. I am still using that method to this day. There were also a lot of fun games involved, a little competition too, which helped motivate the class.”). Learner autonomy is also indicated (“We learnt how to use mnemonics when we were complete

beginners in Arabic, and this helped also to strengthen my learning methods. Therefore, even though other teachers didn't use mnemonics, we already knew how to do it and it was beneficial also to learn more complex terms.), as well as long term retention of vocabulary (All the Arabic words I remember today are words I have learned through mnemonics.”), and a more relaxed learning environment (“My teacher used mnemonics during the first semester which made me feel at ease in the classroom and created a friendly atmosphere”).

Finally, it is worth noting that some student responses still show fear of or discomfort with using mnemonics. One respondent states “I would prefer not to focus on them but they could make the learning experience more enjoyable. At the same time, the wrong mnemonic can stick in my head and end up confusing me for a long time.” It is obvious from statements such as these that while respondent accepts the value of mnemonics as a learning strategy, s/he still has her/his fears about using it. Such a stance would explain the high level of neutral responses in some of the Likert scale statements about effectiveness of mnemonic strategies. All the above is in line with and further explains data gathered from Likert scale close-ended questions and research in the field addressing the mentioned issues, for it provides reasons why students find mnemonics useful.

### **Students Preferred Mnemonic Strategies as Indicated by Interviews**

Interviews indicate two main varieties of mnemonics as preferred by interviewees namely verbal and keywords which verifies results reached by previously mentioned open-ended questions. It is interesting to note that usage of images is controversial among subjects interviewed (“least preferred is the one of images because I find it a little bit confusing also to remember the words itself.” “Maybe remember the scene but then it’s difficult to remember the Arabic word.” “Least preferred was bizarre images one as it is not the way I am used to learn languages where I

am trying to find a connection between like words in different languages and kind of remember the meaning.”). Such comments explain the reasons for the limited support this type of mnemonics got from students in previous questions.

## CHAPTER 5: CONCLUSION

### Chapter Overview

This chapter sums up the results and discussion presented in chapter 4 in terms of the study research questions. Firstly, the chapter relates hypothesis formed about each question to a general sum up of results presented in the previous chapter and their implications. Then, chapter suggests some pedagogical implications deduced from results reached. Finally, it suggests ideas about further research for the topic at hand, as well as the study limitations.

### 5.1. Study's Conclusive Remarks

Recalling the first question which is **“to what extent do students perceive mnemonic strategies as an effective technique for learning Arabic vocabulary?”** It was hypothesized by researcher that AFL students would show positive opinions about using mnemonics in their learning marking this strategy's effectiveness as a means of improving their vocabulary acquisition and retention. Moving on to the second question **“what are students' perceptions about/as to the most useful mnemonic strategies for learning Arabic vocabulary?”**, and based on the piloting activities conducted by researcher before start of study, it was hypothesized that AFL students would be in favor the following three types of mnemonics: verbal mnemonics, visual and/or key-word method. It was hypothesized by the researcher that study results will resonate those reached during pilot stage. As for the **first question** in the current study, results verified study hypothesis. The vast majority of students' responses whether in closed-ended Likert scale question or in open-ended question reveal that subjects agreed to the **usefulness and the effectiveness of using mnemonics** in their vocabulary learning. The obtained results regarding specific points within the Likert scale such as **“Mnemonics and remembering vocabulary,” “Mnemonics in instructing and**



**vocabulary learning,” “Mnemonics and learning context”** show that the vast majority of students agreed that mnemonics had a tangible positive effect on their entire learning experience in regard to learning Arabic vocabulary. Results also emphasize that students consider mnemonics as a fun-infusing activity that has a positive effect on learning environment by enhancing motivation and reducing anxiety (even though results of the last two are not as clear as the previous).

The obtained results about the same themes in regard to the open-ended questions supports the results revealed within the Likert scale. In particular, it supports the notion that mnemonics really help AFL students to significantly boost their acquisition and retention of vocabulary. They also consider it as a fun-infusing activity that has a positive effect on learning environment by encouraging creativeness and improvisation, cooperative learning, and help personalization of their learning. Most students praised the opportunity they received being introduced to this learning strategy at an early stage and some indicated that they are still using it, while others felt that they only used it at initial stages of Arabic learning but stopped later. The findings about the same themes in regard to the open-ended questions support the mentioned results. Students indicated that mnemonics help them in their learning through increasing their motivation and strengthening their self-confidence. Likewise, students firmly asserted that mnemonics make their memory function better through linking their new Arabic knowledge to a previous knowledge they already had within their long-term memory. These results are generally in line with Rasiban et al. (2019) who revealed that using mnemonics is useful for students' learning.

The results also verify the importance of language learning strategies training in general and the importance of training on using mnemonics in specific for vocabulary learning and

retrieval. Study also reveals the positive effects study has on the learning environment when using mnemonics (creativity, autonomy, personalization of learning, motivation, group work, and enjoyment of learning). Though all the above indicates a learning environment that displays lack of anxiety, results reached suggest that mnemonics does have a positive effect on anxiety, but they fall short of showing that using mnemonics actually reduces anxiety. Study results also frame some challenges that students face when using mnemonics. These include difficulty of creating mnemonic relationships, difficulty of remember vocabulary even if students remember the mnemonic relationship created leading to confusion. It must be mentioned however that students' interviews have revealed that challenges which some students face when using mnemonics may in fact result from problems in using that strategy (for example lack of training on how to use mnemonics to reach optimal results) rather than the strategy itself. In such interviews students mention that remembering the link but not the target word happens if they didn't get enough time to practice.

A number of students also mentioned that they do prefer mnemonics for reviewing vocabulary for the exam which stands as proof that students perceive this strategy as effective for learning. It must be mentioned here however that the majority agreed that time controls this choice. This means that if they do have a few days before the exam or at least a couple of days to practice created mnemonics they are effective. The opposite would lead to confusion during the exam. This resonates with what has been mentioned above about challenges of using mnemonics. Participants also indicated that they would resort to traditional methods of learning (for example vocabulary lists) in exam situations out of fear of confusion which – as mentioned earlier – could be the result of lack of proper training on how to use new vocabulary learning strategies like mnemonics. Regarding **students' mnemonics preferred strategy** the vast

majority of students agreed that they do prefer both Verbal and key-word methods in regard to their preferred mnemonics strategy (compared to visual mnemonics) when it comes to AFL learning. However, they also mentioned in gathered qualitative data that they do alternate between both within their learning process and personalize it depending on the target word. They also made clear that they could use strategy chains (i.e., more than one strategy to fulfill the same task). Study participants also emphasized the importance of giving students the freedom to choose type of mnemonics that matches their learning style and targeted task. In other words, searching for a specific type of mnemonic strategy that most – if not all - learners find most preferable may not be feasible since it all depends on the student and the targeted task as study respondents indicate.

### **Pedagogical Suggestions**

Based on results reached by this study, the researcher suggests introducing learning strategies in general and mnemonics in specific from day one showing AFL learners how they work especially when dealing with vocabularies. This is expected, as Oxford (2003) mentions, to have a positive effect on learners' autonomy.

- Whether students are learning in an Arab country or abroad the time they spend in class is a fraction of the time they spend out. Thus, teaching learners how to learn independently/autonomously by using learning strategies, as researchers like (Hsiao & Oxford, 2002; Little, 1995; Oxford et al., 2008; Pemberton, Li, Or, & Pierson, 1996).

indicate, is crucial. This would be especially applicable to mnemonics which – as the current study indicates – helps learners to successfully retain and retrieve the new language

vocabulary when needed in communicative situations. Being able to retrieve and use vocabulary when needed is expected to boost motivation and destroy barriers about the hardness of learning the new language. Increasing students' awareness of their learning process and learning strategies that boost this process, will also help enhance students' metacognitive awareness of which strategies fit best their learning style. Researchers like Teng (2023) have highly recommended. Students' awareness of their learning is also expected to help them create – as participants in this study indicated – the strategy chains and/or mnemonics technique chains they need to self-direct their learning. This is a crucial part of the learning process according to (Oxford, 2017).

- Students in this study make clear that Arabic is challenging especially to those who are not familiar with Sematic languages, thus the need for being introduced to learning strategies like mnemonics that enhance remembering and retaining new vocabulary and so help them to deal with this dimension (or challenge) of learning a new language.
- Results of the study, as indicated in study qualitative data, suggests that students use combination of verbal and keyword methods, and they personalized them to match their preference and what works best for them. This suggests that instructors after introducing learners to ideas and techniques that would facilitate their learning (the various types of mnemonic techniques in the case of the current study), they should give their learners the freedom to select whatever they think fits their learning style best and the target learning task. It is also important that they are provided with opportunity to reflect on how their learning using a strategy like mnemonics (or any learning strategy they are trained to use) is going and how it could be made to work better for them. Such metacognitive awareness is necessary of all learners as Heidari et al. (2012) indicate.

- Results of this study make clear that, training of students on using mnemonics should not stop at training them to create mnemonics but they also should be trained on how to use the created mnemonics successfully. Some participants in this study have indicated in their interviews that they find mnemonics confusing since when using them they tend to remember created mnemonic but not the meaning of word it relates to. However, data gathered from interviews makes clear that ‘confusion’ results from limited time students give to practicing of mnemonics and their related meaning which results in failure to retrieve word especially in stressful situations like exams. This is also emphasized by researchers like Thảo (2022).
- It is important to remember that use of mnemonics may not do away with or replace traditional methods of learning vocabulary (for example the drill and kill or vocabulary lists). Study results indicate that students are more likely to continue relying on these methods with (or in some cases without) the use of mnemonics especially in institutions where traditional methods of assessment are used.

### **Suggestions for Further Research**

Since getting students’ opinion is crucial for people who are in charge of the entire learning process. There is a need to:

- Research teachers’ perceptions about using mnemonics as an instructional approach they use in their classes activities and compare results to get a full picture of perceptions held by two of the main stakeholders when using mnemonics.
- Collect data from different student bodies from different institutions or in different learning contexts. For example, contexts where students learn the language within

authentic environment such as Egypt or within a homogeneous body of students (not diverse like the current study which included students from different western countries across Europe and the US).

- Inspect the suggested strategies or in different words the ideas for developing mnemonics. These are worth further research which as students in current study mentioned include using songs, or combination of techniques such as splitting words, phrases or sentence and their effect on students' learning.

### **Limitations of the Study**

That data collected within the study has few limitations as follows:

- The data is collected from a sole institution which is Leiden university in The Netherlands. Though students had diverse nationalities, they were all studying Arabic in the same context.
- Though demographic data was collected, researcher did not benefit from them in explaining results.
- The interviewed subjects were chosen randomly. However, having been taught Arabic by the same teachers it is possible that the positive perceptions displayed result from the effect of instructor rather than effect of learning strategy. It would therefore be useful if other studies are conducted with multiple teachers and in multiple learning environments to compare results since it might enrich the research and make it more insightful.
- Finally, doing interviews with students who were against using mnemonics would have enriched the research so both sides of the coin could be presented.

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## APPENDICES

### Appendix 1

#### Questionnaire

##### Section I: Background Information

Please check the box that corresponds to the correct answer and write in additional information where needed:

1. What is your gender?

Male	Female

2. What is your native language?

English	Other: Please specify

3. Do you know any other languages? What is your proficiency level?

---

4. How many semesters have you completed of Arabic language coursework (Modern standard Arabic (MSA))? (Please consider this semester as completed.)

1 semester	2 semesters	3 semesters	4 semesters	5 semesters	Other

5. What is the highest degree you obtained?

High School	College Degree	Master's Degree	Doctorate (PhD)	Other

Section II: Likert scale/closed-ended questions:

A. Indicate the extent to which you agree with the following statements according to the scale below. Please check the most appropriate box for each statement.

To what extent do you agree with the following statements?	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
	1	2	3	4	5
1. The teacher should use Mnemonics to introduce vocabulary for the first time.					
2. The teacher should use Mnemonics as a strategy to learn vocabulary.					
3. Mnemonics should be used for reviewing the learned vocabulary.					
4. Using mnemonics in class boosts appropriate usage of targeted vocabulary during communication.					
5. It is easier for me to remember vocabulary using Mnemonics.					

6. Using Mnemonics motivates me to learn new vocabulary.					
7. Using Mnemonics in the classroom wastes class time.					
8. Mnemonics are not an effective way to introduce new vocabulary words in a new lesson.					
9. Using Mnemonics in learning vocabulary is fun.					
10. I don't feel at ease when using Mnemonics in my Arabic class to learn vocabulary.					
11. Introducing new vocabulary words through Mnemonics makes it easier to master Arabic words (to acquire and retain).					
12. I don't like Mnemonics, but I use them as the teacher presents them in class.					
13. Using Mnemonics in Arabic class, makes me feel less anxious.					
14. I find mnemonics confusing.					
15. Drill and kill practice is the best way to learn vocabulary.					
16. When it comes to vocabulary learning a vocabulary list is all I need.					
17. Before an exam I would prefer to use a Mnemonics activity to review than a vocabulary lists.					
18. I love the challenge of making up Mnemonics on my own while learning vocabulary.					
19. Mnemonics are misleading since they do not help me remember spelling and/or accurate pronunciation of targeted vocabulary.					
20. Using mnemonics enhances my long-term vocabulary learning					
21. I still remember words I used mnemonics to learn in previous semesters.					

B. Which type of mnemonics do you prefer most:

Type of mnemonics	Not preferred	Neutral	preferred	Most preferred
Verbal (Similar words in Arabic and languages students are familiar with) (ex: married in English - مريض in Arabic)				
Visual (matching words to bizarre images)				
Key-Word Method (Using verbal and visual mnemonics. Meaning to Relate the sound of an Arabic word to a word in languages are familiar with. Ex: Zara for the word زار so you imagine yourself is visiting Zara store to buy cloths.				

C. Are there any other types of mnemonics that you prefer using? Specify and explain giving examples.

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### Section III: Open-ended questions:

1. When starting a new lesson in class, how does your teacher introduce the *vocabulary*?

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2. How do you learn vocabulary in the classroom? Does your teacher use mnemonics?

Read the following definition of Mnemonics provided by *Heidari et al., 2012*:

*“Mnemonics or in other words memory strategies involves associating new learned vocabulary with a previous knowledge using a diverse set of means either verbal or imagery.*

3- What type of mnemonics does the teacher use? (Choose all that applies)

Verbal (Similar words in Arabic and languages students are familiar with)	Visual (matching words to bizarre images)	Key-Word Method (Using verbal and visual mnemonics. Meaning to Relate the sound of an Arabic word to a word in languages are familiar with. Ex: Zara for the word زار so you imagine yourself is visiting Zara store to buy clothes).
---	---	---

4. In preparation for an exam, what does your teacher do to review vocabulary words?

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5. According to the definition of mnemonics mentioned, do you think Mnemonics boosts AFL vocabulary acquisition and retention in the Arabic classroom? Why? (Please explain your idea as much as possible)

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6. What types of Mnemonics do you/would you like to use in your Arabic classroom to learn vocabulary?



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7. In preparation for an exam, would you use Mnemonics to remember vocabulary words? Why/ why not?

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8. Would you be willing to participate in some follow-up questions?

If yes, please provide your e-mail address: \_\_\_\_\_

## **Appendix II**

### *Interview questions:*

Asking about the most or least preferred mnemonics strategies to find out reasons for students adopted stance?

- 1- In your opinion, are mnemonics important? Why?
- 2- Talk about your experience before and after using mnemonics?
- 3- Talk about your experience in coming up with new ideas for using mnemonics when learning new words on your own.
- 4- Did you face a situation where mnemonics were misleading or confusing regarding recalling or using vocabulary? Give an example and explain how you dealt with this situation.
- 5- Did you recommend using mnemonics to other language learners? Why/Why not?

## Appendix III

### *Consent Forms*



### **Documentation of Informed Consent for Participation in Research Study**

---

**Project Title:** AFL Students' Perception of Using Mnemonics as a Strategy to Enhance their Vocabulary Acquisition and Retention

**Principal Investigator:** Elsayed Elsisí - eelsisi1@aucegypt.edu

\*You are being asked to participate in a research study. The purpose of the research is to discover AFL students' perceptions about using mnemonics as a way to boost students' acquisition and retention, and the findings may be published, presented, or both. The expected duration of your participation is 10 – 20 minutes.

The procedures of the research will be as follows; you are asked to complete a questionnaire. At the end of the questionnaire, please mention if you are willing to take part in a follow-up interview at a later date.

\*There will not be certain risks or discomforts associated with this research.

\*There will be benefits to you from this research. Findings can help you improve your vocabulary learning using mnemonics.

\*The information you provide for purposes of this research is confidential. Your responses will only be used for the purpose of the study, and your identity will not be revealed to anyone.

\*Questions about the research, your rights, or research-related issues should be directed to Elsayed Elsis at +201118864865

\*Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or the loss of benefits to which you are otherwise entitled.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Date \_\_\_\_\_

## **Documentation of Informed Consent for Participation in Research Study**

---

**Project Title:** AFL Students' Perception of Using Mnemonics as a Strategy to Enhance their Vocabulary Acquisition and Retention

**Principal Investigator:** Elsayed Elsisí - eelsisi1@aucegypt.edu

\*You are being asked to take part in this interview to elaborate on the responses you have given in the questionnaire. The purpose of the research is to discover AFL students' perceptions about using mnemonics as a Strategy to boost students' acquisition and retention, and the findings may be published, presented, or both. The expected duration of your participation in the interview is 10 – 20 minutes. Please feel free to extend on your answers and express your opinion and point of view honestly.

The procedures of the research will be as follows; \*This interview is audio-recorded.

\*There will not be certain risks or discomforts associated with this research.

\*There will be benefits to you from this research. Findings can help you improve your vocabulary learning using mnemonics.

\*The information you provide for purposes of this research is confidential. Your responses will only be used for the purpose of the study, and your identity will not be revealed to anyone.

\*Questions about the research, your rights, or research-related issues should be directed to Elsayed Elsis at +201118864865

\*Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or the loss of benefits to which you are otherwise entitled.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Date \_\_\_\_\_

## Appendix IV

### *Proof of IRB Approval*



Case# 2022-2023-272

**To: Elsayed Mohammed Elsayed Emam Elsis  
Raghda Elessawi  
Sara Tarek**

**From: Heba Kotb, Chair of the IRB**

**Date 13/6/2023**

**Re: IRB approval**

---

This is to inform you that I reviewed your revised research proposal entitled

*“AFL Students’ Perception of Using Mnemonics as a Strategy to Enhance their Vocabulary  
Acquisition and Retention ”*

It required consultation with the IRB under the "expedited" category. As you are aware, there were minor revisions to the original proposal, but your new version addresses these concerns successfully. Your proposal used appropriate procedures to minimize risks to human subjects and that adequate provision was made for confidentiality and data anonymity of participants in any published record. I believe you will also make adequate provision for obtaining informed consent of the participants.

This approval letter was issued under the assumption that you have not started data collection for your research project. Any data collected before receiving this letter could not be used since this is a violation of the IRB policy.

Please note that IRB approval does not automatically ensure approval by CAPMAS, an Egyptian government agency responsible for approving some types of off-campus research. CAPMAS issues are handled at AUC by the office of the University Counsellor. The IRB is not in a position to offer any opinion on CAPMAS issues, and takes no responsibility for obtaining CAPMAS approval.

This approval is valid for only one year. In case you have not finished data collection within a year, you need to apply for an extension.

Thank you and good luck.

A small rectangular box containing a handwritten signature in black ink that reads "H. Kotb".

Heba Kotb  
IRB chair, The American University in Cairo  
2078 HUSS Building  
T: 02-26151857

**Institutional Review Board**  
The American University in  
Cairo  
AUC Avenue, P.O. Box 74  
New Cairo 11835, Egypt.

tel 20.2.2615.1000 fax  
20.2.27957565  
**Email: [irb@aucegypt.edu](mailto:irb@aucegypt.edu)**

Email: [hebakotb@aucegypt.edu](mailto:hebakotb@aucegypt.edu)

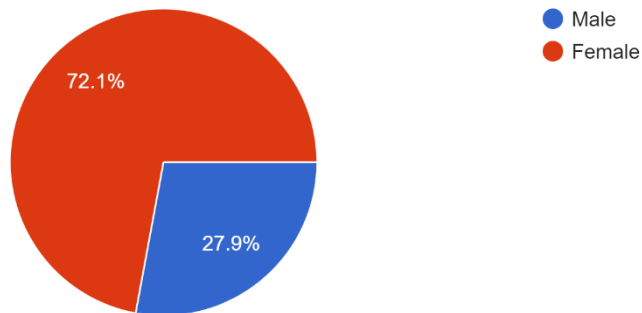
## **Appendix V**



## Figures of subjects' demographic information

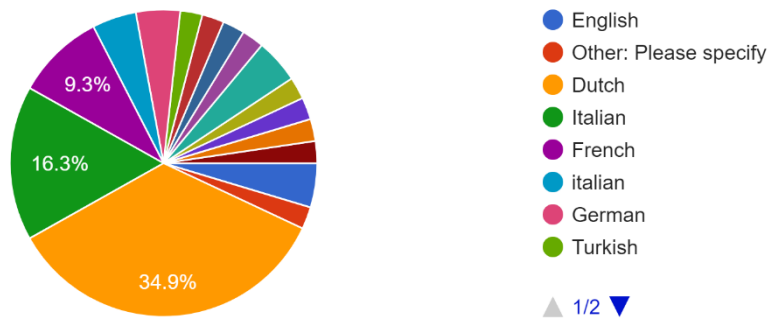
### 1. What is your gender?

43 responses

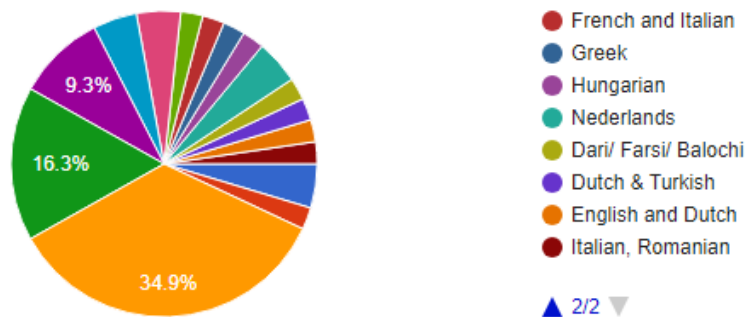


### 2. What is your native language?

43 responses

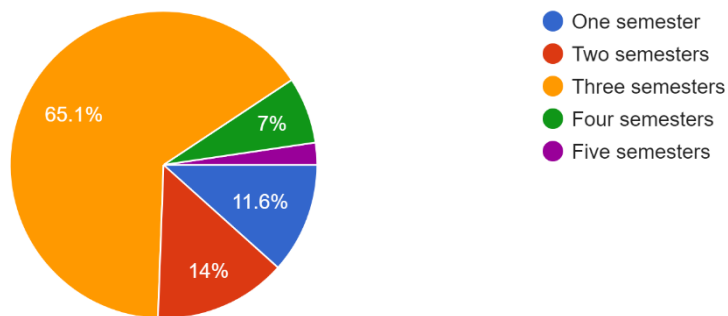


43 responses



4. How many semesters have you completed of Arabic language coursework (Modern standard Arabic (MSA))? (Please consider this semester as completed.)

43 responses



5. What is the highest degree you obtained?

43 responses

