

**THE PATTERNS OF VOCABULARY LEARNING STRATEGIES
EMPLOYED BY EFL LEARNERS AT JORDAN UNIVERISTY
OF SCIENCE AND TECHNOLOGY**

FADI MAHER SALEH AL-KHASAWNEH

**DOCTOR OF PHILOSOPHY
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2013**

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**A thesis submitted to the School of Education and Modern
Languages, College of Arts and Sciences in the fulfilment of the
requirements for the Degree of Doctor of Philosophy in Applied
Linguistics**

**UNIVERSITI UTARA MALAYSIA
2013**

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Abstrak

Beberapa faktor telah didapati untuk diambil kira dalam penggunaan strategi pembelajaran perbendaharaan kata. Walau bagaimanapun, kajian sebelum ini yang telah dijalankan ke atas corak strategi pembelajaran perbendaharaan kata yang digunakan oleh pelajar Jordan menunjukkan faktor ini yang mungkin menjejaskan penggunaan tersebut. Kajian ini bertujuan menyelidiki pola strategi pembelajaran yang berkaitan dengan gender, kefasihan bahasa, program akademik dan pengalaman pelajar Universiti Sains dan Teknologi di Jordan (JUST) dalam pengajaran strategi pembelajaran kosa kata. Kajian ini melibatkan penyertaan 738 orang pelajar sarjana muda JUST daripada tiga buah fakulti iaitu perubatan, kejuruteraan dan pertanian. Instrumen penyelidikan yang digunakan ialah soal selidik strategi yang diambil daripada kajian Schmitt pada tahun 1997 iaitu mengenai taksonomi pembelajaran kosa kata dan temu duga semi struktur. Dapatan kajian menunjukkan bahawa pelajar universiti Jordan menggunakan strategi pada tahap sederhana. Strategi '*determination*' merupakan strategi yang paling banyak dipilih untuk digunakan berbanding strategi kognitif yang paling kurang digunakan. Di samping itu, kajian ini meneliti hubungan kait di antara pengajaran strategi metakognitif dan pembelajaran kosa kata oleh pelajar JUST yang dijalankan selama 10 minggu dalam satu program latihan. Ujian yang dibuat oleh Nation pada tahun 1990 menggunakan soalan aneka pilihan untuk pengetahuan kosa kata adalah berdasarkan. Seramai 60 orang pelajar telah mengikuti eksperimen. Setiap kelas mempunyai 30 orang pelajar telah menerima pengajaran eksperimen mengenai strategi metakognitif dan satu kelas yang lain (*control group*) yang mempunyai jumlah pelajar yang sama telah menerima latihan konvensional. Dapatan kajian menunjukkan kumpulan eksperimen lebih menonjol pencapaiannya di dalam pascaujian latihan kosa kata berbanding kumpulan kawalan. Dapatan kajian juga memberikan implikasi pedagogi kepada guru bahasa Inggeris dan pereka kurikulum yang seterusnya memberi manfaat kepada kefahaman strategi pembelajaran bahasa dalam kalangan pelajar universiti di Jordan.

Kata kunci: Strategi pembelajaran kosa kata, Strategi metakognitif, Gender, Kefasihan bahasa, Program akademik

Abstract

Several factors have been found to account for the use of vocabulary learning strategies (VLS). However, few studies have been conducted on the patterns of VLS used by Jordanian students and the factors that might affect such use. This study investigates the patterns of vocabulary learning strategies (VLSs) used by students at Jordan University of Science and Technology (JUST) in relation to their gender, language proficiency, academic major, and previous vocabulary learning strategies instruction. The participants of this study were 738 undergraduate students from 3 faculties: Medicine, Engineering, and Agriculture at JUST. The research instruments were a strategy questionnaire adopted from Schmitt's (1997) taxonomy for vocabulary learning, and semi-structured interviews. The findings indicated that Jordanian university students used a medium range of strategies. Determination strategies were the most preferred strategies whereas cognitive strategies were the least frequently used strategies. Language proficiency and previous VLSs instruction had significant influences on the overall strategy use, while gender and academic major did not affect the overall strategy use of EFL Jordanian university students. In addition, the present study examines the relationship between metacognitive strategies instruction and vocabulary learning of JUST students through a 10 week training program. Tests based on Nation's multiple-choice test of vocabulary knowledge (1990) were used in this study. A total of 60 students participated in the experiment; one class of 30 which received metacognitive strategies instruction formed the experimental group; the other class of 30 students which received normal training comprised the control group. The results indicated that the experimental group surpassed the control group in the post-training vocabulary test. The findings of this study provide some pedagogical implications for English teachers and curriculum designers which could be beneficial to understand the VLSs currently employed by Jordanian university students.

Keywords: Vocabulary learning strategies, Metacognitive strategies, Gender, Language proficiency, Academic program.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction to the Chapter

This study focuses on the various patterns of Vocabulary Learning Strategies (VLSs) employed by English as a Foreign Language learners (EFL) at Jordan University of Science and Technology (JUST). It also examines the influence of metacognitive strategies instruction on vocabulary learning among those students. Before proceeding to these purposes, it is worthy to present the context of this research. This chapter gives background information on the importance of VLSs, and it sheds lights on the issues related to English status and the educational system in Jordan. The statement of problem, research objectives, research questions, significance of the study, scope of the study, the conceptual framework, and the definition of related terms are also discussed in this chapter. Finally, it describes the structure of the five chapters that comprise this thesis.

1.2 Background of the Study

“Without grammar very little can be conveyed; without vocabulary nothing can be conveyed” (Wilkins, 1972, p. 111). The previous statement stresses the importance of vocabulary in conveying meanings and expressing ideas. The knowledge of vocabulary is essential when using a second or foreign language due to the fact that one is unable to communicate with others without a sufficient amount of words. A

number of leading scholars in the field of vocabulary believe that the amount of words known is one of the crucial factors in second language (L2) or foreign language (FL), especially in the initial stages of language learning where learners possibly have only a small amount of vocabulary (Laufer, 1989, 1998; Nation, 1990; Read, 2000; Meara, 2002).

Over the past few decades, a number of researchers have shifted their concentration within the field of vocabulary learning and teaching with a greater emphasis on learning and learners rather than on teaching and teachers (Sadighi and Zarafshan, 2006). It seems a sensible goal for language teachers to help students to reach a level of autonomy and make them less dependent on teachers (O'Malley and Chamot, 1995). Learners' autonomy can be enhanced by introducing the learner to different vocabulary learning strategies which can be used in developing the learning process. In addition, vocabulary learning strategies (VLSs) help students to be more active and take more responsibility for their own learning (Marttinen, 2008).

A number of studies on vocabulary learning strategies (Richards, 1985; Abraham and Vann, 1987; Nation, 1990; 2001; Arnaud and Bejoint, 1992; Long and Richards, 1997; Schmitt, 2000; Thornbury, 2002; Nassaji, 2006; Yali, 2010) have been conducted since 1980s in response to the above mentioned shift. The studies have concluded that it is common to find difficulties among students in the receptive and productive language due to the limited amount of words. They also indicate that these difficulties lead to a gradual loss of motivation and confidence in learning the second language (Cook, 2001a).

One of the major areas of the vocabulary learning research is the role played by various affective factors in the process of learning vocabulary. Among the affective variables influencing the success of students in learning vocabulary, gender, language proficiency, previous vocabulary learning strategies instruction, and academic major are influential factors (Chen, 1998; Taichi, 2000; Gu, 2002; Marefat, 2003). In addition to the above mentioned factors, there are other variables which may affect the use of vocabulary learning strategies, such as year of study, age, learning style, motivation, previous language learning experience, course level, and language studied (Green and Oxford, 1995). However, prior studies conducted on the factors affecting the use of vocabulary learning strategies are characterized by inconsistent and inconclusive results (Catalan and Gallego, 2010). The reader of books and articles related to vocabulary acquisition is often left with more doubts than certainties (Catalan and Gallego, 2010).

Another major area of research in the field of vocabulary learning is the role of employing certain strategies in enhancing learners' autonomy. Littlewood (2001) claims that the key component to achieve learning autonomy is the learners' active metacognitive strategies referred to as learning strategies. In spite of the benefits associated with metacognitive strategies use among learners, practitioners still know little about the relationship between employing metacognitive strategies and vocabulary learning and recall (Zhao, 2009). Thus, a study which investigates the influence of teaching metacognitive strategies on the use of vocabulary learning strategies particularly in promoting a sense of autonomy among students could provide insights on the possibility of creating autonomy among students. The

findings of this study would be useful to the planning of VLS instruction/ training in Jordanian schools, colleges, and universities.

Previous research works on metacognitive strategies are barely discussed in the English for Specific Purposes (ESP) setting. A number of colleges in the Middle East are in the process of developing specific English courses, having a skill focus or content base such as tourism English, English for technology, and English for aviation. Students in an ESP context face critical difficulties in adopting some deliberate strategies in order to facilitate long-term learning of word meaning (Akbari and Tahririan, 2009). The vocabulary metacognitive strategies seem to be the most important strategies to learn foreign vocabulary especially in an ESP setting (Zhao, 2009). However, very few studies investigated the influences of employing metacognitive strategies on recalling ESP vocabulary, and even fewer studies applied metacognitive strategies in ESP vocabulary learning.

The literature review suggests the need to research VLSs in ESP contexts. The present research aims to investigate the vocabulary learning strategies which are employed by the students of three faculties Medicine, Engineering, and Agriculture at Jordan University of Science and Technology (JUST). In addition, the present study tends to examine the influence of metacognitive strategies training on students' vocabulary learning. This research may not only examine the influence of metacognitive strategies training in learning vocabulary, but it also compare the use level of metacognitive strategies before and after the metacognitive strategies training across groups.

1.2.1 The History of English Language in Jordan

The Hashemite Kingdom of Jordan is an independent Arab country. It attained its independence in 1946 with the establishment as a hereditary constitutional monarchy. Islam is the official religion, Arabic is the official language, and the Jordanian culture adopts the Arab/Islamic culture that is open to world cultures and civilizations. Jordan is located in the heart of the Middle East and the Arab World with an area of 89,342 Km². Jordan is bordered to the north by Syria, to the east by Iraq and Saudi Arabia, to the west by Palestine, and to the south by Saudi Arabia and the Gulf of Aqaba. More than 75 percent of the overall land is desert or semi-desert. The inhabitants of Jordan is six million 3,100,000 male and 2,900,000 female. The majority (82.3 percent) of the population in Jordan lives in urban areas while about 17.7 percent live in rural areas (Ministry of Education, 2010).

The history of English in Jordan can be traced back to 1920. According to Bader (1995), Jordanians started to be exposed to the English language towards the end of World War I, as a result of the British colonization of Jordan. The British colonization of Jordan was the major reason of importing English language into Jordanian society. Since then, English has gained an extreme significance through formal tuition and second language learning.

Presently, English plays an important role in the Jordanian education system and students are expected to communicate effectively in institutions where English is the medium of instruction. According to Jafar (2008), English is taught as a foreign language all through the entire span of the school years from Kindergarten to the second secondary grade, and it is considered as an obligatory subject for the school

curriculum. On the other hand, English language is necessary to communicate with the world, social development, acquisition of new technology, and education (Zughoul, 2003).

The English status in Jordan falls within the expanding circle in which English is a foreign language and its use is predictably growing. According to Kachru (1992), the status of English worldwide contains three main circles (see Figure 1.1). The inner circle is related to countries in which English is the mother tongue; the outer circle involves countries in which English is a second language; and the expanding circle includes countries in which English is a foreign language.

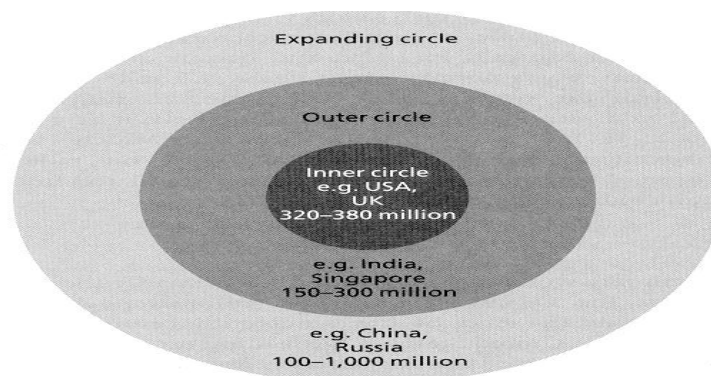


Figure 1.1: Kachru's Taxonomy for English Status Worldwide

The main reasons for teaching English in Jordan are instrumental and educational reasons. English is considered as a prerequisite for most careers and jobs; the Ministry of Education in Jordan gives considerable attention to English teaching especially to the English curriculum and teachers' training (Jafar, 2008). At the university level, English departments in the Jordanian universities have an excellent reputation and are considered as the best among other Arab universities (Hazaymeh,

2004). As a consequence, the central objective of teaching English in Jordan is to empower learners to communicate effectively with others at formal and personal levels (Jafar, 2008).

1.2.2 The Educational System in Jordan

The educational system in Jordan has an emulative human resource system of a quality that provides all students with continual learning experiences that are related to their present and future needs. The vision of the educational system in Jordan is to motivate sustained economic development through an educated population and skilled workforce (The National Report on Adult Education in Jordan [NRAEJ], 2006). In order to achieve the above vision, the education in Jordan attempts to originate a system based upon "distinction", energized by its dedication to high standards, human resources, social values, and a spirit of competition which enhances the country's wealth in a universal knowledge economy (NRAEJ, 2006).

Jordan pays adequate attention to its educational system; accordingly it struggles to bring a great innovation in education which includes all of its components. In spite of the rarity of its natural resources and wealth, Jordan is very enthusiastic and strives to develop a qualitative and quantitative educational system, in a way that could enable Jordan to meet the challenges of the current century (Ministry of Education, 2010). One of the indications of educational development in Jordan is the number of enrolled students from grades 1 to 12 in the current year which is two million representing 33 percent of the overall population, 51percent of whom are males and 49percent are females, and the rate of illiteracy which dropped to 6percent by the year 2005 (Ministry of Education, 2010).

The key principles of the educational system in Jordan as demonstrated in NRAEJ in Jordan (2006, p.4) are as follows:

- The philosophy of the educational system in Jordan is based on the Jordanian constitution, the Islamic Arab civilization, the concepts of the Great Arab Revolt, and the Jordanian national legacy.
- Jordanian education must be complied with both present and future needs and individual and social needs; it must establish a balance between them in order to sustain economic and social development of the country.
- The quality of the educational system should empower a global access to educational opportunities, equality in services delivery, and to the advantages of modern communication technology.
- A quality education system promotes the best in learning and teaching and provides high levels of student success based on the measures embedded in learning yields.
- The vision and mission must be cohesively and solidly merged into the development of decision-making policies and must inform all of educational planning levels.

The Ministry of Education in Jordan has taken into consideration certain steps that would give a better understanding of the vision and mission statements. It will guarantee that the vision and mission statements are debated, understood, and

validated with key stakeholders to accomplish a mutual understanding and create consensus for the aims and priorities of general education (NRAEJ, 2006, p. 5).

Furthermore, the Ministry of Education utilizes the vision and mission to direct schemes, efforts, and investments in the reformation and development of the educational system. The vision and mission will be constantly updated and aligned with the demands of the economy and community. The Ministry of Education in Jordan will activate the role of the Board of Education in the general education policies in Jordan to be able to manage the educational system effectively and build up institutional capacity in the Ministry of Education (NRAEJ, 2006, p. 5).

1.2.2.1 Primary and Secondary Schools in Jordan

The Jordanian schools educational system consists of two major stages: the basic compulsory stage and the secondary stage. The basic compulsory stage consists of ten grades, including the primary and preparatory cycles, which are obligatory for all pupils between the ages 6 to 15 years, and it is free of charge in the public schools. The main goals of this stage are to achieve the general education objectives and to prepare the citizen in terms of his/her personality, physical, spiritual, mental, and social aspects. Also, it aims at making more responsive educational system to social needs and ambitions, and makes it more effective and relevant in order to meet the challenges and demands of achieving the national development plans (Ministry of Education, 2010).

The secondary stage consists of only two grades which are the first secondary grade and second secondary grade, and it has academic and vocational branches. The

secondary education aims to create scientific and vocational experiences to meet the current and anticipated needs of the Jordanian community. It also aims to help students to further their education or join the labor market based on their abilities and interests (Ministry of Education, 2010).

The *Action Pack* series: *Action Pack* (1-8) by Penny Hancock (2006) has been used in the first through eighth grade in Jordanian schools, *Action Pack* (9), by Keddle and Hobbs (2007) in the ninth grade, and *Action Pack* (10) by Haines (2008) in the tenth. The textbook that is used in the secondary stage in Jordanian schools is *Jordan Opportunities 2* by Harris (2006) in the eleventh grade, and *Jordan Opportunities 3* by Harris et al (2007), has been used in the twelfth grade. Both textbook series aim to use environmental related concepts in the entire corpus of passages, activities, exercises and other reading supplements in the Students' Book, Activity Book, Reader and Teacher's Book. The environment, in general, is well represented and a lot of references are made to regional and international components. On the other hand, a number of recommendations have been made to include alternative or supplementary content for the purpose of creating relevant curricula, which encourage the learners to achieve and to view learning as a matter of personal relevance (Bataineh and Jaradat, 2005).

1.2.2.2 Higher Education in Jordan

The history of higher education in Jordan began in the sixties of the last century, when various teachers' institutions were established all over the country. The foundation of these institutions promoted the necessary teaching manpower needed to meet the numerous challenges and demands in that age. The University of Jordan

was established in 1962 as the first public Jordanian university. Yarmouk University followed in 1976, and eight more public universities were established in various parts of the country. In 1989, the council ratified the policy document of establishing private universities. Amman National University was established in 1990 as the first private university followed by 16 more private universities since that date (Ministry of Higher Education, 2010).

Both public and private universities follow the academic system in which the academic year is parted into two semesters and a summer session. The period of study for the first academic degree normally needs four years for most majors, or five years for Engineering, Pharmacy, and Dentistry, or six years for Medicine. In other words, the first academic degree in Jordan needs approximately 132 to 223 credit hours (3 credit hours per subject) based upon the discipline (Ministry of Higher Education, 2010).

The Master's degree requires two to three years after the Bachelor's degree. It consists of two modes, either by course work plus a thesis (24 to 27 credit hours of courses plus 9 to 12 credit hours of research), or by course work (about 36 credit hours plus a comprehensive examination). Candidates for the Master's degree should obtain "good" as a minimum assessment in their Bachelor's degree to be able to further their higher education (Ministry of Higher Education, 2010).

The Doctorate degree (PhD) normally needs three to five years after the Master's degree, and requires based on the subject 60 credit hours (27 to 33 credit hours of course work, plus 27 to 33 credit hours of research), including a doctoral dissertation

in order to fulfill the program's requirements. Candidates should hold the Master's degree with "very good" as a minimum assessment to be eligible for the PhD program (Ministry of Higher Education, 2010).

The medium of instruction at most of the Jordanian universities is Arabic with the exception of Jordan University of Science and Technology (JUST) where English is the medium of instruction for all subjects. At other universities, English is used in teaching Engineering, Medicine, Dentistry, Pharmacy, and other scientific subjects, and recently in Business Administration at the University of Jordan and at the Faculty of Economics at Yarmouk University (Ministry of Higher Education, 2010).

1.2.2.3 Jordan University of Science and Technology (JUST)

Jordan University of Science and Technology (JUST) is located near Ramtha city, 82km north of Amman, the capital city of Jordan, and 20km east of Irbid City, the second largest city in Jordan. It is centrally located at international crossroads to Iraq and Syria, and national roads to major cities in Jordan. The main campus which occupies over 11km, features the main building of a total area of 355.000m constructed according to modern architectural designs suitable to the nature of its faculties. The main campus is surrounded by a green cover of 135.000 trees (www.just.edu.jo).

Having its roots at Yarmouk University in Irbid, JUST emerged as an independent university on September 1, 1986. JUST detached five faculties from Yarmouk University to form its academic nucleus. These faculties were: Faculty of Medicine, Faculty of Dentistry, Faculty of Engineering, Faculty of Pharmacy, and Faculty of

Nursing. Currently, the University hosts ten faculties in addition to the Faculty of Graduate Studies and Deanship of Research. Since then, JUST has established itself as a distinct educational institution for higher education. Instruction virtually started in September 1986 (www.just.edu.jo).

The vision of JUST is to be a world class university distinguished in high quality teaching and research to have gained ground among the top 500 international universities by the year 2012. Consequently, the university aims to graduate qualified students prepared to meet the needs and demands of the labor market and compete nationally, regionally and internationally. This goal is achieved through adjusting the learning environment to attract more Arab and foreign students to enrich the cultural life through creating a multi-cultural atmosphere (www.just.edu.jo).

Specifically, the English department at JUST was born at the beginning of the academic year 1996/1997. The students are required to take core university requirements, college requirements, specialized courses, and general English courses. The specialized courses concentrate on courses of the special language such as medical professions, business and public administration, engineering professions, military and police sciences, tourism and hotel management, and the airline business and the media (www.just.edu.jo).

The English department at JUST has been created as a result of the obvious problems in the current English departments at Jordanian universities due to the “Lack of focus. The main rationale for creating the department was to put forth the real needs

of Jordanian community (Khuwaileh 1995). Also, it intends to delineate the needs of the Jordanian labor market in general terms and calls for reformation of the focus in the English departments from the traditional syllabi or the teaching of general English (Khuwaileh 1995).

The section above has discussed the importance of learning English (both internationally and in Jordan), the educational system in Jordan, and the ways of learning a second or a foreign language. However, recent studies emphasize the learners' autonomy since it is considered to be more effective when learners take control of their learning and take the responsibility for it. In other words, the language learning strategies taken by the learners would be more effective on their attempt in learning a second or a foreign language.

1.3 Problem Statement

Vocabulary is considered as a fundamental component of language competence among first and second language learners and teachers (Decarrico, 2001). Learners of second or foreign language recognize the importance of words in their learning and the difficulties they might face in communication purposes due to the limited amount of words (Thornbury, 2002). Although vocabulary has always been a central part of language learning and teaching, it is widely accepted that the acquisition of vocabulary items constitutes the most difficult aspects of learning a second or foreign language (Stoffer, 1995; Read, 2000; Hamzah, Kafipour, and Abdullah, 2009; Khasawneh, 2010).

A number of researchers (Allen, 1983; Long and Richards, 1997; Schmitt, 1997; Jackson and Amvela, 2000; Prevost, 2010; Yang, 2010) have highlighted that vocabulary realm has received little attention compared to other language learning aspects such as reading, writing, listening, and speaking. Hedge (2000) claims that the main reason for the little emphasis on vocabulary learning studies is the less attention given by learners themselves. Language teachers have given much of the attention to the recent discoveries in the realm of English grammar.

Since vocabulary is an essential part of language teaching and learning, vocabulary learning strategies should be an indispensable part of vocabulary learning to enable learners to reach a sense of learning autonomy. Learning autonomy can be achieved by helping learners to discover the meaning of new words, to store them in their memories, and to use them by practicing and expanding their vocabulary (Williams and Burden, 1997).

Effective vocabulary learning strategies would improve learners' proficiency and greater self-confidence. However, it is not easy for all language learners to learn and acquire the meanings of new words, to store them in their memory and recall them at will, to use them in appropriate situations, or to expand their vocabulary size (Schmitt, 1997; Nation, 2001; Siriwan, 2007). It is very important for learners to be taught different types of vocabulary learning strategies and to receive appropriate training sessions in order to help learners to cope successfully with unfamiliar or unknown words (Siriwan, 2007; Zhao, 2009).

Prior research works on vocabulary learning strategies have revealed that successful language learners use more strategies than unsuccessful learners, and they are aware of how to new words or connect new words to old knowledge (Ahmed, 1989; Sanaoui, 1995; Schmitt, 1997; Atay and Ozbulgan, 2007). Gu (2005) indicates that metacognitive strategies where learners intentionally select, consciously monitor, and evaluate the strategy they use are considered as the most effective vocabulary learning strategies for learners to achieve their goals. Hence, learners should be capable to consciously apply a strategy to a cognitive process to strengthen the link between the strategy and the vocabulary learning achievement (Macaro, 2005).

Moreover, a number of scholars (Wenden, 1991; Oxford, 1996; Cohen, Weaver, and Li, 1998; Atay and Ozbulgan, 2007) point out the need for explicit instruction for learners in order to help them to become more aware and proficient with a wide range of strategies that might be used through learning process. However, there are few studies to identify the relationship between metacognitive instruction and vocabulary learning (Zhao, 2009). Consequently, this research aims to bridge the gap and gives a better understanding of the relationship between metacognitive strategies instruction and vocabulary learning among university students.

As mentioned above, the development of vocabulary learning strategies is important in order to help learners or students to be successful in their academic demands. Every course or academic major has its own technical vocabulary that students are required to master the concepts of the course (Blachowicz and Fisher, 2000; Alverman and Phelps, 2005; Vacca and Vacca, 2007). The lack of academic success is basically linked with the limited knowledge of vocabulary in that subject (Kamil,

2003). Although there are some research works on vocabulary learning strategies, there are few conducted on vocabulary learning strategies employed by students from different disciplines (Prevost, 2010). Therefore, this study aims at investigating the vocabulary learning strategies employed by Medicine, Engineering, and Agriculture major students at JUST in order to fill the gap and to add some contributions to the literature in this field.

The studies carried out on vocabulary learning strategies have emphasized the individual differences among the students in their use of and vocabulary learning strategies. Among those variables, gender (Wharton, 2000), motivation (Oxford and Nyikos, 1989), academic major (Peacock and Ho, 2003), learners' beliefs (Intaraprasert, 2004), career interests (Ehrman and Oxford, 1989), different learning atmospheres (Wharton, 2000), previous vocabulary learning instruction (Wharton, 2000), and language proficiency (Nation, 2001) are said to be affect the use of VLSs. Among the above factors, gender, language proficiency, previous vocabulary learning instruction, and academic major seem to be the most influential variables in the students' use of vocabulary learning strategies (Siriwan, 2007).

On the other hand, most of the previous studies identifying the relationship between individual differences and the use of vocabulary learning strategies have been limited to native speakers of English or non-native speakers of English learning English as a Second Language (ESL). Learning English as a second language should be differentiated from English as foreign language (EFL) in the same manner of distinguishing learning first language from learning a second one (O'Malley and Chamot, 1990). In fact, there are few studies which studied vocabulary learning

strategies among EFL learners. A consequence of that has led to applying vocabulary learning strategies of ESL to EFL curriculum creating insufficient learning environment (Yang, 2010). Various scholars (Intaraprasert, 2004; Hairrell, 2008; Prevost, 2010; Yang, 2010) emphasize the need to conduct more studies that focus on identifying this relationship among EFL learners. Thus, this research attempts to offer more insights into the vocabulary learning strategies used by EFL learners in order to add some theoretical contributions in this field.

In Jordan, English is considered as a foreign language and its importance is restricted to the process of university entrance selection purposes (Sawalha and Chow, 2012). Most of the research works which have been carried out in the Jordanian EFL context (e.g. Zughoul and Husain, 1985; Zughoul, 1991, 2003; Khataybeh, 1992; Khuwaileh and Shoumali, 2000; Rabab'ah, 2003; Abu Ghazaleh and Hijazi, 2011) affirm that most of Jordanian EFL students are weak in English.

These studies indicate Jordanian EFL students face several problems in all the skills of English in general and in the amount of vocabulary they have in particular. Likewise, these studies attributed the weakness in English among Jordanian students due to the imposed English language curriculum which focuses on the traditional methods of teaching rather than the more developed ones. Hence, it is worthy to find the process of acquiring English vocabulary among Jordanian students in order to infer some reasons of their weakness in English.

In addition, EFL learners have difficulties in English especially in using English for communication due to the limited vocabulary they have in order to communicate

effectively in authentic communicative situations (Rabab'ah, 2003). English language is being learned by Jordanian students in their home country where the native language is Arabic. This is because of the limited opportunities to learn English through natural interaction in the target language which is only possible when students encounter native speakers of English who come to the country as tourists (Wahba, 1998; Rabab'ah, 2003).

Several complaints have been made about the weakness of English vocabulary of university students who enrolled in different disciplines at the Jordanian universities (Bataineh and Jaradat, 2005). Obeidat (2005) attributes the students' weakness to the lack of effective vocabulary learning strategies as they did not receive any instruction or training to use such strategies. In the university, students enroll for the high level of education without appropriate and effective vocabulary learning strategies (Zughoul, 2003; Rabab'ah, 2003). This could lead to the inability for students to succeed in mastering English of academic disciplines. For example Obeidat (2005), who carried out a study on language learning strategies use among 300 students at Hashemite University, found that 62.2 percent of the students were considered under limited and very limited users of language learning strategies. This shows that the majority of students lack the ability to use learning strategies and need help to use VLSs in their EFL learning.

In the context of EFL education in Jordan –to the researcher's knowledge-, no empirical research works have been conducted to investigate the vocabulary learning strategies among Jordanian students, specifically public university students with reference to their individual differences. To bridge this gap, this study aims to

examine vocabulary learning strategies employed by undergraduate students at three faculties Medicine, Engineering, and Agriculture. Specifically, it examines whether or not these variables are related to the use of vocabulary learning strategies. In addition, this study will help to shed light and give a better understanding of the influence of metacognitive strategies instruction on vocabulary learning which may add to the knowledge regarding foreign language teachers' and learners' awareness of strategies used for learning vocabulary items.

1.4 Research Purposes

Some studies of strategy use have been conducted in EFL contexts, but not many. Wharton (2000) argues that it is ineffective to generalize strategy use of EFL learners of one ethnic group and apply them into EFL learning curriculum of other ethnic groups, believing that research into the strategy use of EFL learners would represent an overall strategy use of language learning. Wharton further pointed this out as “the dangers of an ethnocentric bias regarding the definition of vocabulary language learning strategies” (p. 204). More specific studies of strategy use of EFL learners are needed so that teachers can fully comprehend the strategy use of EFL learners and guide them to become successful in their own learning environment. This is applicable especially with English education in countries like Jordan.

The English language has gained ‘power’ in the Jordanian society as a means to keep up with globalization trends. Therefore, a great demand for effective learning models for English learners has increased. Students and teachers have paid more attention to vocabulary learning strategies in order to create a native-like proficiency. This has created great demand in developing effective and efficient learning and teaching

methods in English education. English teaching and learning theories and methodologies have been introduced through a great deal of research. However, very little has been done in examining the Jordanian EFL learners' English learning strategies. In addition, very few studies have been conducted regarding individual differences that affect English learning strategy use.

The main purpose of this study is to examine the different patterns of vocabulary learning strategies employed by JUST students. The findings of this research indicate the comprehensive characteristics of Jordanian EFL learners' strategies in the vocabulary learning process, and how the variables such as gender, language proficiency, academic major, and previous VLSs instruction affect strategies used to learn vocabulary by Jordanian EFL learners. Specifically, this study provides insight to English teachers and curriculum planners regarding the overall patterns of vocabulary learning strategies of Jordanian EFL learners at the university level.

1.5 Research Objectives

This study aims at achieving the following specific objectives:

- 1) To determine the types of vocabulary learning strategies employed by JUST students.
- 2) To determine the level of using vocabulary learning strategies employed among JUST students.
- 3) To identify the variances between students' use of vocabulary learning strategies and four independent variables: gender, proficiency level, academic major, and previous vocabulary learning strategies instruction.

- 4) To examine the influence of metacognitive strategies teaching on the students' use of vocabulary learning strategies.

1.6 Research Questions

This study is primarily aimed at investigating the vocabulary learning strategies employed by students at Jordan University of Science and Technology (J.U.S.T)

This study aims to give answers to the following questions:

- 1) What types of vocabulary learning strategies do JUST students use?
- 2) What is the level of using vocabulary learning strategies among JUST students?
- 3) Do the vocabulary learning strategies used by JUST students vary across gender, proficiency level, academic major and previous vocabulary learning strategies instruction?
- 4) Does the teaching of metacognitive strategies influence the learning of vocabulary among JUST students?

1.7 Significance of the Study

This research aims to investigate the VLSs overall strategies employed by EFL learners at Jordan University of Science and Technology (JUST), providing pedagogical implications for both learners and teachers because it highlights the use of vocabulary learning strategies, sheds light on the fallacies of vocabulary learning, and provides insights to the beliefs or thinking regarding strategies for learning and acquiring vocabulary items. An important contribution of this study to learners is it helps them to become aware of their own learning strategies and guide them to self-

direct learning by adopting, modifying, and applying vocabulary learning strategies to learning tasks, in contrast to learning vocabulary knowledge from teachers.

Considerable data about vocabulary learning strategies employed by Jordanian EFL learners will also be available to English teachers and curriculum designers. The findings would give a better understanding to English teachers and curriculum designers about the overall vocabulary learning strategies used by Jordanian EFL learners. Teachers will be able to reflect on whether or not their current teaching method is consistent with the learners' overall strategies. Moreover, teachers will become aware of the Jordanian EFL learners' expectations of their English learning environments, which strategies should be included to their English curriculum, and what tasks and learning materials must be provided to learners, taking into consideration the learners' contexts.

The implementation of proper strategy instruction into the English curriculum is important and it was emphasized by different scholars (O'Malley and Chamot, 1990; Oxford, 1990; Yang, 1996). Teachers will be able to help learners to become aware of how, where and when the vocabulary strategies should be used in the process of English learning by incorporating the vocabulary strategies into the English curriculum. Therefore, this awareness among learners will enhance the learners' self-directed learning. Also, by integrating vocabulary learning strategies training into English class, Jordanian EFL learners will be able to adopt their own learning autonomy in English learning. The importance of learning autonomy was emphasized by Oxford (1990); she states that learning strategies are "tools for active,

self-directed involvement which is essential for developing communicative competence” (p. 9).

1.8 Scope of the Study

This study aims at investigating the various vocabulary learning strategies employed by university students in Jordan. It also examines the influence of metacognitive strategies instruction on vocabulary learning among those students. This study does not cover any other language skills such as reading, listening, writing, and speaking. The five categories of VLSs proposed by Schmitt (1997) are used as criteria in the present research. These strategies are determination, social, memory, cognitive, and metacognitive strategies. In addition, this research examines the patterns of VLSs used by JUST students in relation to only four variables (i.e. gender, language proficiency, academic major, and previous VLSs instruction). In other words, this study does not cover the correlation between the use of VLSs and other variables such as year of study, motivation, beliefs, and so on. Therefore, a larger-scale survey including more variables is required to provide more insights and give clearer picture of the use of VLSs.

This study focused on the students who were studying at Jordan University of Science and Technology, students from other universities were not included. Thus, the findings obtained from this study could not be generalizable to Jordanian students at other universities. The students majoring in Medicine, Engineering, and Agriculture at JUST were selected, using a stratified random sampling procedure as different categories of students are represented. This study does not include students from other faculties as it focuses on only students from the previously mentioned

faculties. Once again, the findings gained from this study could not be generalizable to all students enrolled in different faculties at JUST. To achieve the early mentioned objectives, this research used both quantitative (questionnaire) and qualitative (semi-structured interviews) methods to collect the necessary data of this survey. It is extremely important to include both methods yielding the process of in-depth data collection and analysis, so that the findings of this study will be validated.

1.9 Conceptual Framework

The major purpose of reviewing the literature related to VLSs is to find evidence which could help the researcher to develop a theoretical or conceptual framework. The purpose of developing the theoretical or conceptual framework is to locate the present research in the context of previous studies, and other scholars' point of views. Based on the literature review on VLSs, the frameworks of the past studies indicated that the use of VLSs has been hypothesized to be influenced by two major sets of variables. These variables include individual differences variables (e.g. attitudes, beliefs, motivation, anxiety, age, gender, learning styles, academic major, language proficiency and ethnicity). The other set of variables include learning and teaching conditions (e.g. course level, previous VLSs instruction, length of study, task performed, and language studied).

In the present study, the researcher selected a set of variables that have been received very little attention from the past studies or their results were contradictory and inconsistent (e.g. gender, language proficiency, academic major, and previous VLSs instruction). The conceptual framework of the current research is shown in figure 1.2.

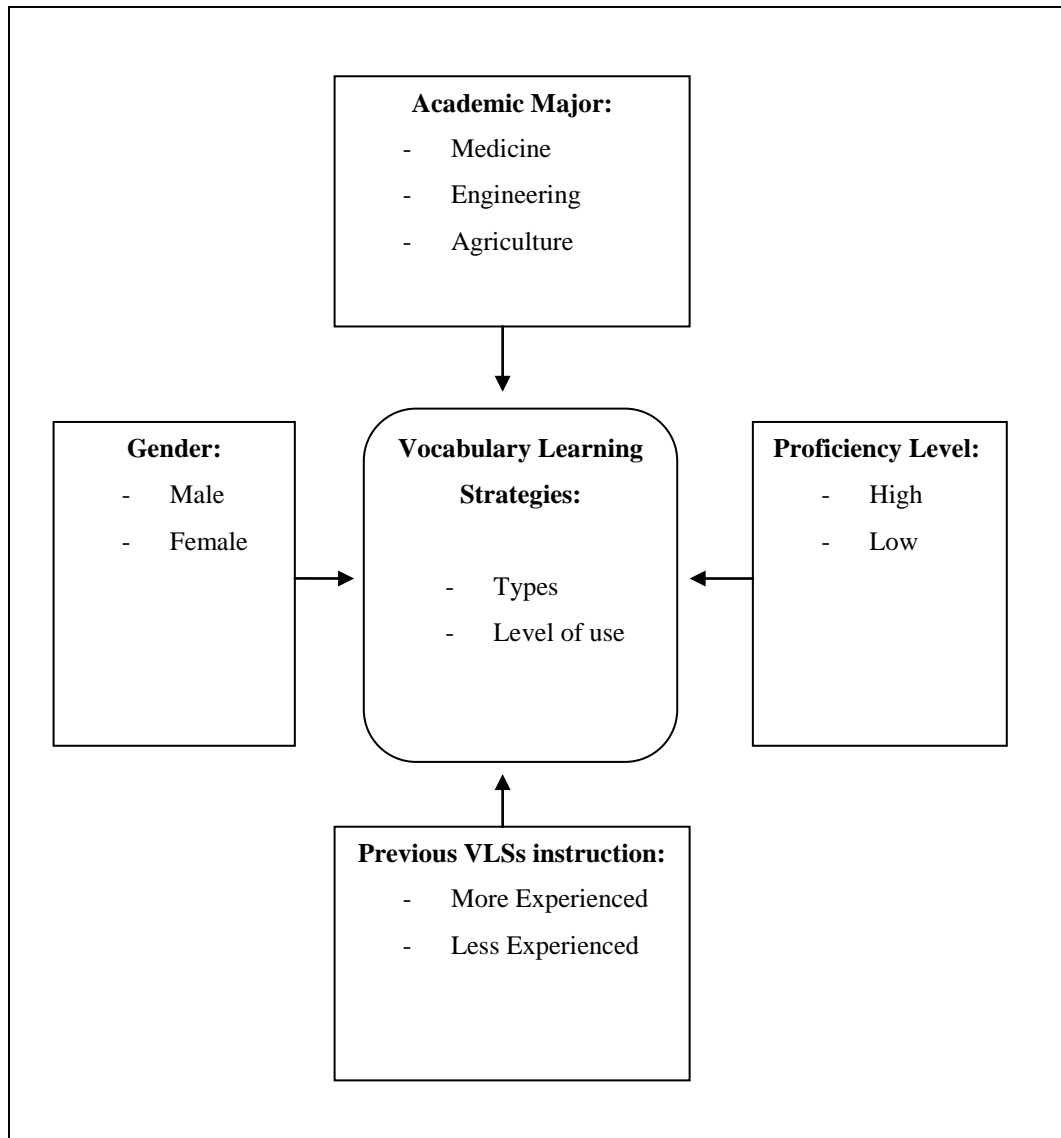


Figure 1.2: Conceptual Framework of the Study

In the present research, the proposed conceptual framework is formed based on the previous studies on VLSs. Figure 1.2 shows that the types and the level of using VLSs are considered as the dependent variable in the present study, and they are hypothesized to have a relationship with certain variables namely gender, language proficiency, academic major, and previous VLSs instruction. In other words, the aforementioned variables will be examined as independent variables which are assumed to have relationship with the types and the level of using VLSs.

1.10 Definition of Terms

The following terms will be used throughout this study. These terms are defined in order to clarify how they are used in the present research. They are listed in alphabetical order for quick reference.

English as a Foreign Language (EFL): The language being learned is not that which is spoken in the community in which it is being learned (Cohen, 1998) (e.g. learning English in Jordan).

English as a Second Language (ESL): This term refers to where “the language being learned is that which is spoken in the community in which it is being learned” (Cohen, 1998, p.4).

Language learning strategies (LLSs): This term will be discussed in depth in Chapter 2. However, for the purpose of the current research and based on the review of previous definitions, this study will adopt Oxford’s definition of language learning strategies which is “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (Oxford, 1990, p. 8).

Vocabulary Learning Strategies (VLSs): This term refers to the knowledge about the mechanisms (processes, strategies) used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode (Schmitt, 1997, p. 203). In the context of the present

investigation, “VLS/VLSs” will sometimes be used as the abbreviation for vocabulary learning strategy/strategies.

Metacognitive Strategies: This term refers to “the strategies which enable learners to plan, observe and assess the best ways of learning vocabulary in order to achieve better results (Schmitt, 1997, p. 216).

Vocabulary Learning: This term refers to the learners’ ability to recall or recognize what has been learned (Nation, 2001).

1.11 Structure of the Thesis

The current proposal is structured as follows:

Chapter One: Introduction

This chapter describes the background of the study, English status in Jordan, problem statement, research objectives, research questions, significance of the study, definition of terms, and organization of the thesis.

Chapter Two: Literature Review

This chapter begins with an overview of English language learning followed by the literature related to language learning strategies. The literature review on some aspects of vocabulary learning strategies and the findings of selected comprehensive studies on VLS are also provided. The last section of this chapter sheds light on the relationship between vocabulary teaching and the use of vocabulary learning strategies.

Chapter Three: Methodology

The design and the methods which are used in this study are presented in this chapter. It includes the variables, the subjects, methods of data collection, and justifications for selecting them.

Chapter Four: Findings and Discussions

In this chapter, quantitative and qualitative data are analyzed and presented in relation to the types and frequencies of vocabulary learning strategies. The relationship between the independent variables and the frequency of VLSs, and the results of the training sessions are discussed as well.

Chapter Five: Conclusions and Recommendations

This chapter concludes the thesis. It provides a summary of the results, implications for teaching, discusses the limitations, and proposes some suggestions for future research works.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical and empirical literature related to language learning strategies and vocabulary learning strategies. The review of literature is divided into four main parts: English language learning, theories on English language learning, English language learning strategies, and English vocabulary learning strategies. The following section outlining the importance of learning English language and its status worldwide

2.2 An Overview of English Language Learning

The English language is considered to be one of the most used languages in the world. Also, it plays a significant role in various domains such as commerce, economy, and politics. Basically, people learn English to escort the successive developments around the world (Alatis and Straehle, 1997). In addition, it is considered as the official or second language in over 60 countries and it has a vital role in 20 countries. English is the main language of presenting the scientific researches, technological revolutions, and computer industries (Alatis and Straehle, 1997).

Crystal (1997) discusses the importance and the wide usage of English. He reveals that 70percent of the linguistic journals in the world are published exclusively in English, 85percent of international associations make official use of English, 80 percent of the electronically- stored information in the world is currently in English,

85percent of the world - film market is in English, and 85 percent of the scientific articles are written in English. In other words, English is widely used in most of the academic fields.

In the academic field, Musa (1985) carried out a study on the importance of English in the academic institutions. The participants of this study involved 357 secondary school students in the United Arab Emirates. The students responded to a questionnaire and 75 percent of the students stated that they liked studying English because of its importance as an international means of communication in all scopes including business, economy, and mass media and that it would enable them to pursue their postgraduate studies, and to keep them in contact with a high - status foreign culture.

Another study was conducted by Alatis and Straehle (1997) to show the reasons of learning English among Swiss school children. The results of this study revealed that 97 percent of the students liked to learn English because it can be used all over the world. The other reasons reported were because English is the language of business 65 percent; English is the language of tourism 60 percent; English increases the job opportunities 55 percent; English is the language of science 51 percent, and English is the language of entertainment 28 percent.

In fact, Pakir (1999) points out that the spread of English is most likely to continue because of the rapid spread of telecommunication, mass communication, business, and internet links. Thousands of international non-native to non-native communication and deals are undertaken daily in a huge number of settings: trade,

diplomacy, tourism, journalism, science and technology, politics etc. As a result, there is a need to ensure that there are competent writers and speakers of English worldwide. Various approaches and theories have been developed about the way we learn a second language. The next section will discuss some of the theories which are relevant to second language acquisition.

2.3 Theories on English Language Learning

Several theories have been proposed in attempting to explain how languages are learned. A wide variety of disciplinary perspectives have been developed in this area, but the most influential theories are linguistics and psycholinguistics ones (Mangubhai, 2006). Various scholars are interested in the way we acquire a second language. Most of the theories and approaches (e.g. nativism, behaviorism, and cognitive theory) which deal with second language learning have been derived from the way we acquire our first language. Mangubhai (2006) indicates that there are 40 to 60 Second Language Acquisition (SLA) theories and no certain theory can merge all the variables to specify an absolute theory of second language learning.

In parallel with L1 learning theories in linguistics and psychology, theoretical L2 learning constructs range from behavioristic approaches, grounded on philosophical empiricism to innatist positions aligned with rationalism in philosophy, and interactionist views, which are based on the interaction between a human being's innate capacities and the environment. Furthermore, cognitive psychology developments have sparked off new SLA models based on information processing or neurology (Lightbown and Spada, 1999). An overview of the SLA theories can provide the theoretical context where vocabulary learning strategies can be placed

and assessed. The discussion of second language learning begins with some traditional theories namely, nativist, behaviorist, cognitive, emergentist, and socio-constructivist perspectives.

2.3.1 Behaviorist Theory

The behaviorist theory believes that language is a learnt behavior and is basically learned through imitation (Skinner, 1957; Hilgard, 1962). It views learning as habit formation based on stimulus-response pairings which became invigorated by ensuing reinforcement (Walker 1975). By imitating the sounds and patterns in their environment, children are reinforced by the encouragement, praise or successful communication with those around them. The child's success in acquiring the language is directly affected by the regularity of positive reinforcement and by the quality and quantity of input (Lightbown and Spada, 1999).

Lightbown and Spada (1999) define the term *Imitation* as Word-for-word repetition of all or part of someone else's utterance. For example, Mother: "Do you have your ball and glove?" Child: "Ball and glove." *Practice*: Repetitive manipulation of form. For example, child: "I can throw the ball." "She can throw the ball." "Jenny can throw the ball." They point out, however, that children, unlike parrots who repeat the familiar, don't simply imitate everything they hear. Rather, they choose things to imitate that are relevant to the present learning situation, and imitate the new words and structures until they become hardwired. Once learned, they move on to other novel words and phrases.

The forms of language children use cannot be attributed solely to imitation and practice. Children create their own sentences by recognizing patterns in the language and using them in new contexts (Brown, 2000). Although behaviorism can explain the more basic elements for language acquisition, it cannot account for the acquisition of more elaborate structures, it lacks the ability to explain “Why” and “How” language does develop; it is unable to offer insights toward the cognitive and social processes involved in language development (Straat, 1974). As (Brown, 2000) points out, this approach “failed to account for the abstract nature of language, for the child’s creativity, and for the interactive nature of language acquisition.” (p. 24).

As a result, practices through imitation and continuous repetition of the same structures were regarded as very important for consolidation of learned material. By extension, teaching would need to be focused on similarities and differences between the students’ L1 and L2; different structures were supposed to impose difficulties while similar structures were supposed to facilitate learning. In that direction, contrastive analysis was initiated with the aim of tracing areas of difference between pairs of languages in order to predict potential sources of difficulty (Mitchell and Myles 1998).

2.3.2 Nativist Theory

The limitations of behaviorist theory were emphasized by a considerable number of scholars. These limitations have led to a new approach called “nativism theory”. The nativist perspective is associated with Chomsky (1966) and it assumes that the ability to learn a language is innate. Also, Chomsky points out that all human beings have a

biological controlled Language Activation Device (LAD) that allows children to develop, use, and understand language. Currently, the LAD is more commonly referred to as Universal Grammar (UG) and is believed to be consisted of principles shared by all languages. These principles include Critical Period Hypothesis (CPH), integrated system, pivot grammar, and Parallel Distributing Processing Model (PDP) (Lightbown and Spada, 1999).

Brown (2000) defines critical period as “a biologically determined period of life when language can be acquired more easily and beyond which time language is increasingly difficult to acquire” (p.53). Lenneberg (1967) claims that the LAD will work successfully only if it is activated at a certain time in the critical period.

The other aspect of the nativist approach is called the integrated system which considered the child’s first language as a genuine system in itself, and that language development is not merely going from an erroneous structure to a more acceptable grammatically correct structure (Brown, 2000). Berko (1958) demonstrates that children apply rules for the formation of plural, present progressive, past tense, third singular, and possessives with nonsense word tests.

In addition, as nativist researchers examined and compared a child’s “telegraphese” to the complex language of five- to ten-year olds, they discovered early grammar systems of children referred to as pivot grammars(Brown, 2000). Two words uttered would typically fall into two different classes. For example, in “My cap,” “That dog,” and “Mommy shoe,” the words on the left were called pivot words because they could revolve around words on the right, which were in a more “open” class.

Two words from the same class were understood not to go together. Many rules were discovered in the generative framework of the child, and the rules seem to be anchored in children's UG (Brown, 2000).

On the other hand, Spolsky (1989) proposed the Parallel Distributing Processing Model (PDP) in order to challenge the Chomskyan view of understanding generative rules that connections were serial, or had just one neural connection between a pair of neurons in the brain. Spolsky said that rather than having to apply a series of rules one after the other, the child's performance may be like that of an orchestra's playing a symphony, with several synchronic levels of neural interconnections.

On the whole, the UG approach has been a powerful tool for a detailed description of the first language as well as of any other language. Despite its merits, criticism of the UG theory has been extended to UG-based approaches to SLA for their dealing primarily with syntax (Mitchell and Myles 1998). However, researchers currently seek to investigate UG interfaces not only with phonology, morphology, and the lexicon but also with semantics and discourse /pragmatics (White, 2009).

More importantly, a purely linguistic approach cannot adequately explain L2 acquisition, whose profound understanding requires sophisticated models including a combination of linguistic as well as psychological and social factors (Saville-Troike, 2006). Besides, in Chomsky's (1966) linguistic theory there seems to be no room for personal advancement in the context of individual differences, language learning strategies included.

2.3.3 Cognitive Development Theory

Cognitive theories believe that language depends on meaning and that language learning is guided by our knowledge of the world (Bloom, 1993). Unlike behaviorism, cognitive perspective is based on the thought process behind behavior. A distinguishing characteristic between linguistic and cognitive approaches to language learning is that the former claim that there is an innate language-specific module in the mind while the latter treat language as not being separate from the other aspects of cognition. However, diverging views of researchers in both domains also exist for either L1 or L2 learning (Mitchell and Myles, 1998).

General cognitive theories emphasize on the child's ability to contribute to his or her own development, and how the child's mind creates theories about the world. These theories contain aspects of language which are constructed through interaction with communication peers. Thus, language and cognitive skills develop chronologically (Bloom, 1993). On the other hand, the theory of cognitive development which was first developed by Jean Piaget (1896-1980), deals with the nature of knowledge itself and how humans come gradually to acquire it, construct it, and use it (Piaget, 1983).

According to Piaget (1983), the mechanism by which the mind process new information contains four main stages as follows:

- a) *Sensorimotor (birth to about age 2)*: During this stage, the child learns about himself and his environment through motor and reflex actions. Thought derives from sensation and movement. The child learns that he is separate from his environment and those aspects of his environment and continues to

exist even though they may be outside the reach of his senses. Teaching a child in this stage should be geared to the sensorimotor system. You can modify behavior by using the senses: a frown, a stern, or soothing voice.

- b) Preoperational (*begins about the time the child starts to talk to about age 7*): Applying his new knowledge of language, the child begins to use symbols to represent objects. Early in this stage he also personifies objects. He is now better able to think about things and events that aren't immediately present. Oriented to the present, the child has difficulty conceptualizing time. His thinking is influenced by fantasy and he assumes that others see situations from his viewpoint. He takes in information and then changes it in his mind to fit his ideas.
- c) Concrete (*about first grade to early adolescence*): During this stage, accommodation increases. The child develops an ability to think abstractly and to make rational judgments about concrete or observable phenomena, which in the past he needed to manipulate physically to understand. In teaching this child, giving him the opportunity to ask questions and to explain things back to you allows him to mentally manipulate information.
- d) Formal operation (*adolescence*): This stage brings cognition to its final form. This person no longer requires concrete objects to make rational judgments. At this point, he is capable of hypothetical and deductive reasoning. Teaching for the adolescent may be wide ranging because he'll be able to consider many possibilities from several perspectives.

In this cognitivist perspective, some theories were inspired by the comparison of the mind to a computer, which can store, integrate, and retrieve language information.

Some other theories related language acquisition to brain activity, drawing on recent developments in neurobiology (Lightbown and Spada, 2006). To be more specific, the information processing approach in psychology is based on the notion that complex behavior is composed of simple processes viewed to be autonomous and can thus be studied independently. Humans are considered to be active with a mind that is a general-purpose, symbol-processing system of limited capacity (McLaughlin and Heredia 1996).

This approach can be transferred to the learning of a second language, which is thought to be a complex cognitive skill as it involves internal representations that guide performance. The above theory has been applied to the domain of language learning strategies by Chamot and O'Malley (1987). Since strategies are complex procedures which learners apply to tasks to make their learning as effective as possible, they can be described as procedural knowledge acquired through cognitive, associative, and autonomous stages of learning. Like other procedural skills, they are consciously and deliberately performed in the cognitive and associative stages of learning until their final application without an individual's awareness in the autonomous stage (O'Malley and Chamot 1990).

2.3.4 Emerginist Theory

The emergentist theories pay attention to the social and cognitive processes of language learning. These approaches assume that knowledge is driven by organizations of dynamic processes that function in a complicated manner, and language is therefore considered as a dynamic process (Elman, Bates, Johnson, and Karmiloff-Smith, 1996). This point of view argues that the acquisition of an

alternative communication form is needed by the failure to develop language through ordinary processes. Thus, alternative language can be developed through dynamic interactive processes such as production, memory, and cognitive processes that are fundamentally different from the processes of typical language development (Von Tetzchner and Grove, 2003).

In addition, emergentist theories posit that language acquisition is a cognitive process that emerges from the interaction of biological pressures and the environment. According to these theories, neither nature nor nurture alone is sufficient to trigger language learning; both of these influences must work together in order to allow children to acquire a language. The proponents of these theories argue that general cognitive processes sub serve language acquisition and that the end result of these processes is language-specific phenomena, such as word learning and grammar acquisition. The findings of many empirical studies support the predictions of these theories, suggesting that language acquisition is a more complex process than many believe (Ellis, 1998).

Table 2.1: Summary of Some Theories of Language Learning

Theory	Contribution	Criticism
Nativist	Understanding the innateness of language and the biological basis of language development	It is limited as the social, cognitive, and behavioral processes were not addressed
Behaviorist	Explaining the importance of reinforcement in language learning	It is limited as the social, behavioral, and neurological structures were not addressed
Cognitive Theory	Highlighting the role of cognition in language learning. Also, identifying the interaction between genetic, psychological, and environmental factors in language learning	It is limited as the language acquisition was not addressed as a separate issue
Emerginist	Showing the significance of employing dynamic interaction of multiple processes in language learning	The context of social culture is absent from the theory

2.3.5 Summary and Implications

It seems that the L2 theories described earlier consider learning from different perspectives. The behaviorists emphasize extrinsic demands on the learner without having to know anything about his/her mental structure. Chomsky's (1966) innatism precipitated the demise of behaviorism and gave rise to cognitivism, which views learning as a problem-solving process in the head irrespective of the external circumstances that create a problem. A situated approach attributes learning to the dynamic relations created in social interaction (Bredo 1997).

Apparently, an attempt to unify focal elements of existing theories while probing into personality factors could give a "complete" picture of L2 acquisition. That is far from being realized in the near future (Lightbown and Spada 2006). Such a broad

theory addressing the linguistic, cognitive, affective and social aspects of learning could also consider and explain language learning strategies among other individual difference variables, which exemplify the uniqueness of the human mind in addition to any general principles that may govern it (Dornyei, 2005).

2.4 English Language Learning Strategies (LLSs)

The use of language learning strategies by second or foreign language learners plays a vital role in overcoming the difficulties in communication and they would consolidate the learners' competence towards the language (Nunan, 1988). A considerable number of studies have shifted their concentration from teaching methods to LLSs due to the lack of the findings that indicate a certain teaching method which ensure the success in the second or foreign language teaching (Nunan, 1988). Various studies have attempted to affirm the significance of language learning strategies use by successful language learners (Abraham and Vann, 1987; Chamot and Kupper, 1989). In addition, the significance of LLSs arises from the fact that teaching students to use LLS can help them to become successful language learners. It enables learners to gain a sense of autonomy needed to improve their progress in developing L2 skills (Oxford and Crookall, 1989). The discussion of LLSs begins with the various definitions offered by different scholars. The next section examines and compares the different definitions of LLSs.

2.4.1 Definition of Language Learning Strategies

Learning strategies have been widely used in the educational field. The term “strategy” refers to some major notions such as competition, planning conscious

manipulation and movement toward a goal (Oxford, 1990). Many researchers have attempted to formulate their own terms in order to define the language learning strategy (see Table 2.2, page 45). Rubin (1975) views language learning strategies as “the techniques or devices, which a learner may use to acquire knowledge” (p.43). Bialystok (1978) defines language learning strategies as alternative instruments to utilize available information to develop proficiency in a second or a foreign language. Further, he identified four types of language learning strategies: formal practicing, functional practicing, monitoring, and inferencing.

According to O’Malley, Chamot, Manzanares, Russo, and Kupper (1985), language learning strategies can be defined as “any set of operations or steps used by a learner that will facilitate the acquisition, storage, retrieval, or use of information” (p.23). They also identified twenty-six strategies which classified into three subgroups: cognitive, metacognitive, and socio-affective. Nisbet and Schucksmith (1986) offer another definition of language learning strategies as “always purposeful and goal-oriented, but perhaps not always carried out at a conscious or deliberate level. They can be lengthy or so rapid in execution that it is impossible for the learner to recapture, recall or even be aware that one has used a strategy” (p.25). In a similar vein, Chamot (1987) defines language learning strategies as “techniques, approaches or deliberate actions that students take in order to facilitate the learning and recall of both linguistic and content area information” (p.71).

Schemeck (1988) views strategy as “the implementation of a set of procedures (tactics) for accomplishing something” and learning strategy is “a sequence of procedures for accomplishing learning” (p.5). Oxford and Crookall (1989) define

language learning strategies as “steps taken by the learner to aid the acquisition, storage, and retrieval of information” (p.404). They indicate that strategies might be used consciously but it can also become habitual and automatic with practice. Similarly, Oxford (1990) claims that language learning strategies are “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (p.8). MacIntyre (1994) provides a definition of language learning strategies as “the actions chosen by language students that are intended to facilitate language acquisition and communication” (p.190).

Likewise, Wenden (1998) defines language learning strategies as “mental steps or operations that learners use to learn a new language and to regulate their efforts to do so” (p. 18). Cohen (1998) views language learning strategies as “the steps or actions selected consciously by learners either to improve the learning of a second language or the use of it or both” (p. 5). Oxford (2001) gives a definition of language learning strategies as “operations employed by the learner to aid the acquisition, storage, retrieval and use of information; specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more efficient, and more transferable to new situations” (p. 166). Richard and Schmidt (2002) view language learning strategies as “the ways in which learners attempt to work out the meanings and uses, grammatical rules, and the aspects of the language they are learning (p. 301). Ultimately, Gu (2003) defines language learning strategies as “a series of actions a learner takes to facilitate completion of a learning task”.

Table 2.2: Definitions of Language Learning Strategies

Scholar	Year	Definition
Rubin	1975	“The techniques or devices, which a learner may use to acquire knowledge” (p.43).
Bialystok	1978	Alternative instruments to utilize available information to develop proficiency in a second or a foreign language.
O’Malley et.al	1985	“Any set of operations or steps used by a learner that will facilitate the acquisition, storage, retrieval, or use of information” (p.23).
Nisbet and Schucksmith	1986	“Always purposeful and goal-oriented, but perhaps not always carried out at a conscious or deliberate level. They can be lengthy or so rapid in execution that it is impossible for the learner to recapture, recall or even be aware that one has used a strategy” (p.25).
Chamot	1987	“Techniques, approaches or deliberate actions that students take consciously in order to facilitate the learning and recall of both linguistic and content area information” (p.71).
Schemeck	1988	“The implementation of a set of procedures (tactics) for accomplishing something” and learning strategy is “a sequence of procedures for accomplishing learning” (p.5).
Oxford and Crookall	1989	“Steps taken by the learner to aid the acquisition, storage, and retrieval of information” (p.404).
Oxford	1990	“Specific actions taken by the learner-often consciously- to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (p.8).
MacIntyre	1994	“The actions chosen by language students that are intended to facilitate language acquisition and communication” (p.190).
Wenden	1998	“Mental steps or operations that learners use to learn a new language and to regulate their efforts to do so” (p. 18).
Cohen	1998	“The steps or actions selected by learners either to improve the learning of a second language or the use of it or both” (p. 5).
Oxford	2001	“Operations employed by the learner to aid the acquisition, storage, retrieval and use of information; specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more efficient, and more transferable to new situations” (p. 166).
Richard and Schmidt	2002	“The ways in which learners attempt to work out the meanings and uses, grammatical rules, and the aspects of the language they are learning (p. 301).
Gu	2003	“A series of actions a learner takes to facilitate completion of a learning task”.

Table 2.2 shows different definitions to language learning strategies which have been proposed by various researchers. Generally, these definitions refer to language learning strategies as techniques, steps, operations, processes, thoughts, or behaviors employed by learners in order to facilitate, guide, and solve problems in their language learning and language use. On the other hand, Ellis (1994) points out that the various definitions of language learning strategies have four main front parts which are: general approaches or particular techniques, behavioral and/or mental techniques, intentional and conscious or subconscious approaches, and direct or indirect techniques for language development. The definition of language learning strategies used by Oxford (1990) is adopted in the current study due to many reasons.

Firstly, the various student-desired purposes are apparent in Oxford's (1990) definition. These purposes are relevant to the altered nature of learning when learning is enhanced by strategies as well as the aspects of learning and use of information ("easier, faster,..... more self-directed). Hence, Oxford's (1990) definition widens the different goals proposed in the LLS definitions offered by different scholars. Secondly, unlike most of the other definitions of language learning strategies, there is an emphasis in Oxford's definition on consciousness as an integral part of language learning strategies. Cohen (1998) indicates that when strategies become automatic and habitual and when learners no longer have the awareness of using LLS strategies, these strategies should be called "processes" not "strategies".

Finally, Oxford's (1990) definition is the most comprehensive definition to date; this is because it contains the characteristics of language learning strategies as follows: 1) contributing to the main goal, communicative competence, 2) allowing learners to become more self-directed, 3) expanding the role of teachers, 4) being problem-oriented, 5) having specific actions taken by the learners, 6) involving many aspects of the learner, not just the cognitive, 7) supporting learning both directly and indirectly, 8) not always being observable, 9) often being conscious, 10) being able to be taught, 11) being flexible, and 12) being influenced by a variety of factors" (p. 9). After discussing the various definitions of LLS, it is worthy to discuss the classification of LLS which will be explained in the following section.

2.4.2 Classifications of Language Learning Strategies

Prior researchers who are interested in the field of language learning strategies have faced the issues of categorizing the LLS used by learners. A number of scholars have presented their own models containing various LLS. Bialystok (1978) proposed a model which includes four types of strategies: (a) functional practicing, (b) formal practicing, (c) monitoring, and (d) inferencing. Functional practicing is related to strategies employed for a functional purpose. Formal practicing and monitoring refer to strategies used for language practice in the classroom. Inferencing involves guessing from contexts. Bialystok (1978) provides a clear model which emphasizes both learning in a real-life situation and in a formal setting. She emphasizes the cognitive and metacognitive aspects of learning, but the social and affective components were not addressed (Lan, 2005).

Another taxonomy proposed by Naiman, Frohlich, and Todesco (1978) contained five main categories that they affirmed to be used by good language learners: (a) an active task approach, (b) realization of language as a system, (c) realization of language as a means of communication and interaction, (d) management of affective demands, and (e) monitoring of second language performance. This taxonomy was proposed based on data collected from interviews with a group of 34 good adult language learners. This classification has offered many techniques used by successful language learners but on the other hand, it lacks the theoretical foundation in second language acquisition (O'Malley and Chamot, 1990).

Moreover, Rubin (1981) developed a model of LLS consists of two broad strategies (direct and indirect strategies). According to her, direct strategies are those that benefit directly to the learner's language learning and include: (a) clarification/verification, (b) monitoring, (c) memorization, (d) guessing/inductive reasoning, (e) deductive reasoning, and (f) practice. Indirect strategies are those that contribute indirectly to language learning and include: (a) creating opportunities for practice, and (b) using production tricks such as using circumlocutions, synonyms, or formulaic interaction. Rubin's taxonomy was developed based on her observation of the learners, but it makes contributions to outlining the important strategies employed by good language learners (Lan, 2005).

O'Malley and Chamot (1990) presented a taxonomy contains three-part strategy based on data collected through think-aloud and interviews by ESL young adult learners. These three strategies are as follows:

- 1) Social/affective strategies: questioning for clarification, cooperation and self-talk.
- 2) Cognitive strategies: Resourcing, grouping, elaboration of prior knowledge, note-taking, deduction/induction, summarizing, auditory representation, making inferences, and imagery.
- 3) Metacognitive strategies: planning, monitoring, and evaluating.

The above mentioned taxonomies have provided insights into potential LLSs, and they have also given plentiful contributions in describing, interpreting, and categorizing different strategies. However, there is a need to build a more comprehensive classification system (Lan, 2005).

Oxford (1990) developed one of the most comprehensive which is widely accepted in the language learning area. She built this system based on her synthesis of previous research, factor-analytic, and questionnaire-based research of LLS among adult learners (Lan, 2005). She begun by adopting a version of Rubin's (1981) taxonomy of distinction but rapidly dropped this distinction because it was found unsustainable and not particularly useful to practitioners (Oxford, 1990, 2001). Her model consists of six categories as follows:

- 1) Direct strategies which include three strategies as follows:
 - a) *Cognitive strategies*: These strategies empower the learners to use the language materials directly, for instance synthesizing, reasoning, note-taking, and analysis.

- b) *Memory strategies*: These strategies enable the learners to link the L2 notions and concepts with another. However, they are not related to deep comprehension. Memory strategies encompass images, key words, and acronyms.
 - c) *Compensation strategies*: These include strategies which help the learners to bridge the knowledge gap in the language fields. Gestures and guessing from context are examples of compensation strategies.
- 2) Indirect strategies which also contain three main strategies as follows:
- a) *Metacognitive strategies*: they involve recognizing the learners' priorities and needs, planning, monitoring and evaluating the learning process. In other words, they are used to handle the learning process.
 - b) *Affective strategies*: help the learners to regulate their motivation, attitudes and emotions, for example, self-encouragement and reducing anxiety level.
 - c) *Social strategies*: They involve interaction and collaboration between the learners themselves, and the learners and their teachers. Social strategies include asking questions, asking for clarifications, and talking with native speakers in order to explore the target culture.

Despite the contributions and advances provided by her system, Oxford cautioned that “there is not complete agreement on how many strategies existed; how they should be defined, demarcated, and categorized, and whether it is – or ever will be impossible to create a real, scientifically validated hierarchy of strategies” (Oxford, 1990, p.17).

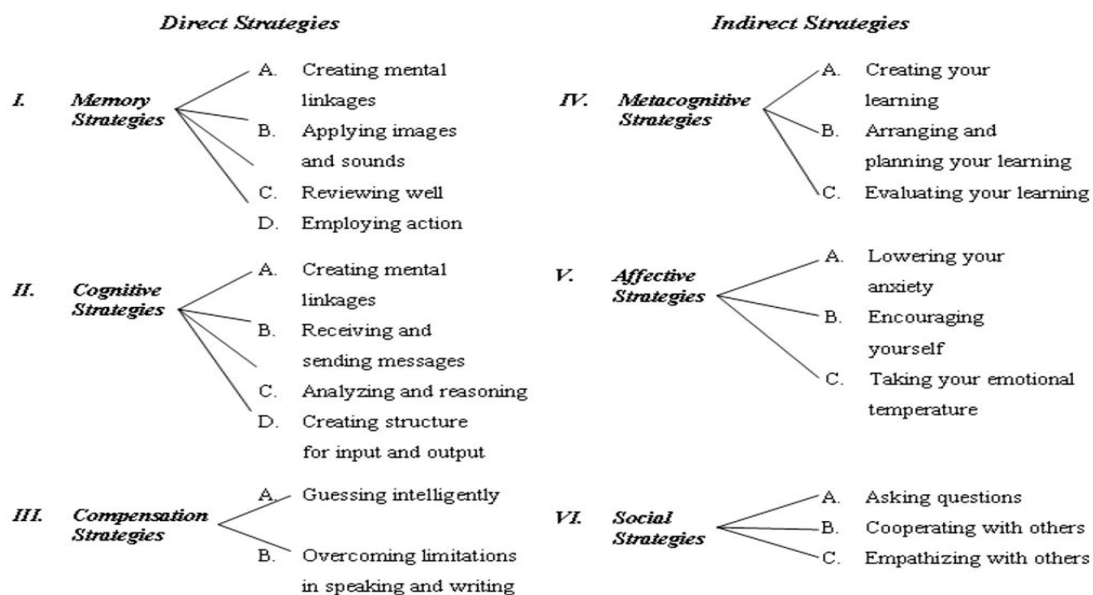


Figure 2.1: Oxford's LLS Classification (1990)

In this study, the influence of teaching metacognitive strategies in vocabulary learning will be examined due to their importance in the success of language learning, and to allow college students to be autonomous in their language learning (O' Malley and Chamot, 1995; Schwartz, 1992; Yang, 2004; Zhao, 2009). On the other hand, the use of LLSs might be influenced by various individual differences such as gender, language proficiency, and academic major. These individual factors will be discussed in details in the next section.

2.4.3 Factors Affecting the Choice of Language Learning Strategies

As mentioned above, research works on both language learning and teaching have paid more attention to language learners themselves in a sense that to some extent learners' individual factors may affect the success of language learning (Yang, 2010). The definitions of language learning strategies mentioned above show that the employment of such strategies depends on certain individual differences and cultural

features (Oxford, 1990). The study of the individual factors and characteristics of learners would be useful guidelines, and it would offer insights into the various ways and different rates of employing language learning strategies (Deneme, 2010).

Oxford and Nyikos (1989) indicate that the factors affecting the strategy choice are: language being learned, level of language learning, proficiency, or course, degree of metacognitive awareness, gender, affective variables such as attitude, motivation, and language learning goals, specific personality traits, career orientation or field of specialization, overall personality type, national origin, learning style, aptitude, language teaching methods, task requirement, and type of strategy training.

Therefore, a number of researchers have studied the factors that affect the choice of language learning strategies. Studies on language learning strategies began with the strategies of “good language learners” by Rubin (1975) and Stern (1975). Recently, the complication of strategy use has become clearer. Nyikos and Oxford (1993) point out that there are various strategy aspects of the same learners at different levels not only of the learners themselves. Therefore, recent studies began to shift the focus from the investigation of the strategies themselves to the factors affecting the choice of strategies.

Many studies have been conducted in order to identify the relationship between language learning strategies and factors affecting the choice of strategy. Oxford and Nyikos (1989) investigated the relationship between language learning strategies and factors such as gender, academic major, motivation, and years of study. Also, Oxford and Nyikos studied the influences of gender differences, career, and psychological

type on adults' language learning strategies. The findings of another study by Ehrman and Oxford (1989) revealed that there is a link between language learning strategies on the one hand, and learning styles, gender, occupation, and age on the other hand. Oxford and Ehrman (1995) examined the effects of proficiency, learning styles, motivation, age, gender, and anxiety on the choice of language learning strategies by adults.

On the other hand, Catalan (2003) points out that language learning strategies might be related to other personal elements such as type of memory and culture. In sum, the primary objective of language learning is to communicate effectively by using another language. The learners who are highly motivated would use a wide range of learning strategies than less motivated learners. Various language tasks need different strategies, for instance the learning of simple greetings would affect the selection of language learning strategies (Oxford, 1990). The following subsection will discuss the relationship between the language learning strategies and some of the factors affecting the choice of such strategies.

2.4.3.1 Language Learning Strategies and Good Language Learners

A number of studies (Oxford and Nyikos, 1989; Goh and Foong, 1997; Land and Oxford, 2003; Gan, 2004; Magogwe and Oliver, 2007) have focused on the concept of good language learner strategies. These studies indicated that various characteristics can affect the success of language learning such as age, intelligence, and aptitude (Rubin, 1975). According to Cook (2001a), good language learner strategies can be defined as the techniques used by learners who are known to be good at second or foreign language learning. Cook (2001) indicates that good

language learners employ the following ways in learning a second or a foreign language:

- 1) Good language learners would adapt and modify the strategies they face by finding a suitable learning style for them.
- 2) Good language learners engage themselves in the process of language learning by participating positively in learning situations.
- 3) Good language learners have a high degree of awareness about language as a system and as a communication.
- 4) Good language learners pay an adequate attention in improving their language knowledge.
- 5) Good language learners learn the second language as a separated system instead of connecting everything to their first language.
- 6) Good language learners are aware of the demands that second language learning requires.

However, some strategies are easier to use if one has good knowledge of some other strategies (Kristiansen, 1998). In fact, the learners should be aware about the effective strategies in language learning. In other words, the learners should pay an adequate attention to the metacognitive skills which reflect their own learning and realize their own limitations (Kristiansen, 1998). The responsibility falls on the teachers' role by developing the students' autonomy and making them aware of the

different ranges of strategies they can adopt. Furthermore, creating a specific training in certain strategies and identifying the difference and similarities between the process of second language learning and other school subjects would be effective in learning a language (Cook, 2001b).

On the other hand, various studies have been conducted to find the connection between language learning strategies and the language proficiency among learners (see Table 2.3, page 56). In the United States of America, Oxford and Nyikos (1989) conducted a study on 1200 students who are studying different languages in a mid-western American university. The researchers used a background questionnaire which covers gender, elective versus required course status, proficiency, and motivation. Also, the researchers administered Strategy Inventory for Language Learning (SILL) which includes 121 items asking learners to report the frequency of language learning strategies they use. The findings revealed that the students with a high level of proficiency were more likely to use language learning strategies than did lower level students.

Similarly, Land and Oxford (2003) investigated the connection between language learning strategies used and language proficiency among elementary students in Taiwan. The participants were 379 sixth grade elementary students who enrolled in Taiwanese schools. The students were divided into three groups, high proficiency, medium proficiency, and low proficiency students. Strategy Inventory for Language Learning (SILL) by Oxford (1990) was used in order to collect the necessary data for the study. The findings indicated that high proficiency students used compensation strategies, cognitive strategies, affective strategies, and metacognitive strategies

more frequently than low and medium proficiency students. Also, medium proficiency students employed compensation strategies more frequently than did low proficiency students.

Furthermore, Gan (2004) undertakes a study aims to investigate how successful and unsuccessful students employ language learning strategies out-of-class language learning. The participants were nine successful and nine unsuccessful EFL students who enrolled in Chinese Universities. The researchers used a combination of methods in order to collect data which included interviews, diaries, and follow-up email correspondence. The results revealed that successful students reported a wide range of language learning activities than unsuccessful students.

Likewise, Magogwe and Oliver (2007) conducted a study to identify the relationship between language learning strategies and proficiency, age, and self-efficacy among students in Botswana. The sample was 480 students from primary schools, secondary schools, and tertiary institutions. The participants were divided into three groups: poor, fair, and good. Strategy Inventory for Language Learning (SILL) by Oxford (1990) was administered in order to gather the necessary data for the study. The results have shown that high proficiency students used language learning strategies more frequently than low proficiency students. Besides, there was no significant variance in using strategies among students in the tertiary level.

Table 2.3: Related Studies on Language Learning Strategies and Language Proficiency

Scholar	Year	Location	Research Instrument	Sample	Findings
Oxford and Nyikos	1989	United States of America	Strategy Inventory for Language Learning (SILL) by Oxford (1990) Background Questionnaire	1200 students who are studying different languages in a Mid-western American University	The students with a high level of proficiency are more likely to use language learning strategies than did lower level students
Foong and Goh	1997	China	Strategy Inventory for Language Learning (SILL) by Oxford (1990)	175 ESL Chinese students who enrolled in intensive English course in the at the Nanyang Technology University, Singapore	High proficiency students employed compensation and cognitive strategies more frequently than low proficiency students
Gan	2004	China	Interviews, Diaries, and Follow-up email correspondence	Nine successful and nine unsuccessful EFL students who enrolled in Chinese Universities	Successful students reported a wide range of language learning activities than unsuccessful students.
Magogwe and Oliver	2007	Botswana	Strategy Inventory for Language Learning (SILL) by Oxford (1990)	480 students from primary schools, secondary schools, and tertiary institutions	High proficiency students used language learning strategies more frequently than low proficiency students There was no significant variance in using strategies among students in the tertiary level

Previous research works on language learning and language proficiency revealed that Oxford's Strategy Inventory for Language Learning (SILL) was the main instrument used to measure students' use of language learning strategies (e.g. Foong and Goh,

1997; Land and Oxford, 2003; Magogwe and Oliver, 2007; Oxford and Nyikos, 1989). On the other hand, few studies have investigated language learning strategies and its relationship with proficiency by using qualitative methods such as interviews and diaries (e.g. Gan, 2004). Therefore, it is recommended to conduct more qualitative studies which concern with this field.

2.4.3.2 Language Learning Strategies and Gender

Gender is considered as one of the factors which influence the choice of language learning strategies. In fact, gender was tested as affective variable in the prior studies dealt with gender and its relationship with language learning strategies (McMullen, 2009). Much of the research works have been done in order to identify the connection between gender and the use of language learning strategies (see Table 2.4, page 60).

Oxford and Nyikos (1989) carried out a study on 1200 students who are studying different languages in a mid-western American University. The participants included were approximately equal number of male and female students. The researchers used a background questionnaire which covers gender, elective versus required course status, proficiency, and motivation. Also, the researchers administered Strategy Inventory for Language Learning (SILL) which includes 121 items asks learners to report the frequency of language learning strategies they use. The results showed that female students reported more frequent strategy use of language learning strategies than male students.

Green and Oxford (1995) investigated the use of language learning strategies among 374 college students in Puerto Rico. The sample consisted of 178 female students and 196 male students. Also, the participants were divided into three groups: pre-basic, basic, and intermediate students. The researchers used an entrance exam and Oxford's SILL as research instruments in order to achieve the purposes of their study. The findings indicated that males and females students varied significantly in using language learning strategies. Female students used affective, memory, cognitive, metacognitive, and social strategies more significantly than male students.

In addition, Dreyer and Oxford (1996) studied the gender effect on choosing language learning strategies among South African university students. The subjects of this study comprised 305 freshman (females=179; males=126) who enrolled in the English program at Potchefstroom University in South Africa. Oxford's SILL questionnaire was administered to report the frequency of using language learning strategies among participants. The results showed that female students used metacognitive strategies and social strategies more frequently than did male students.

Abu Shmais (2004) conducted a study to investigate the language learning strategies used by Arab students who enrolled in the English program at An-Najah National University in Palestine. The sample of this study included 99 (females=80; males=19) students who were studying B.A. degree in English language. Once again, Oxford's SILL questionnaire was administered in this study in order to measure the students' use of language learning strategies. The findings revealed that no significant relationship was found between male and female students in using language learning strategies.

Recently, Ghee, Ismail, and Kabilan (2010) carried out a study aimed at investigating the language learning strategies utilized by a group of learners who were learning Mandarin as a foreign language in one of the public universities in Malaysia. The subjects of this study were 156 (51= males; females=105) Malaysian students who were pursuing their diploma and degree programs at a public university and enrolled in a Mandarin course to accomplish the university requirements. Two questionnaires were administered to gather the data needed; the first questionnaire asked about the students' background and the other was adapted from Oxford (1990). The results indicated that female students used more learning strategies than male students.

Table 2.4: Related Studies on Language Learning Strategies and Gender

Scholar	Year	Location	Research Instrument	Sample	Findings
Oxford and Nyikos	1989	U.S.A	-Background questionnaire Strategy Inventory for Language Learning (SILL)	1200 students	Female students reported more frequent strategy use of language learning strategies than male students
Green and Oxford	1995	Puerto Rico	Entrance exam and Oxford's SILL	178 female students and 196 male students	Female students used affective, memory, cognitive, metacognitive, and social strategies more significantly than male students
Dreyer and Oxford	1996	South Africa	Oxford's SILL	305 freshman (females=179; males=126)	Female students used metacognitive strategies and social strategies more frequently than did male students.
Abu Shmais	2004	Palestine	Oxford's SILL	99 (females=80; males=19) students	No significant relationship was found between male and female students in using language learning strategies
Ghee, Ismail, and Kabilan	2010	Malaysia	Background questionnaire Strategy Inventory for Language Learning (SILL)	156 (51= males; females=105) Malaysian students	Female students used more learning strategies than male students

The findings of the prior studies conducted on language learning strategies and gender have indicated that gender significantly affects the use of language learning strategies among learners. Furthermore, the results of the previous research works on gender have drawn different conclusions. Some of these studies indicated that female students use more language learning strategies than male students (e.g. Dreyer and Oxford, 1996; Ghee, Ismail, and Kabilan, 2010; Green and Oxford, 1995; and Oxford and Nyikos, 1989). Other studies found no significant relationship between

gender and the use of language learning strategies (e.g. Abu Shmais, 2004). Hence, more studies are required on this field in order to gain a better understanding of this relationship in language learning.

2.4.3.3 Language Learning Strategies and Academic Major

Academic major is one of the most important factors that affect the choice of language learning strategies. Much of the research works have been carried out to investigate the relationship between the use of language learning strategies and academic major (see Table 2.5, page 64).

Oxford and Nyikos (1989) surveyed 1200 students who enrolled at the Mid-western American University in the United States of America. They also examined the relationship between academic major and the use of language learning strategies. The participants were studying different majors which included Business, Engineering, Computer Science, Physical Science, Education, Social Science, and Humanities. In order to achieve the purpose of this study, the 121-item version of SILL was used as a research instrument. The findings indicated that Education, Social Science, and Humanities students used more strategies than students from other disciplines such as self-testing, memorizing, and planning.

Rong (1999) conducted a study among tertiary-level students in China to identify the use of language learning strategies among English-majoring students and non-majoring students (Science students). The participants consisted of 87 English -majoring students and 84 Science-majoring students. Strategy Inventory for Language Learning (SILL) by Oxford (1990) was used as an instrument in collecting

the necessary data of this study. The results revealed that English –majoring students used affective, social, compensation, and cognitive strategies more than science-majoring students.

In addition, Peacock and Ho (2003) surveyed the use of language learning strategies among 1006 students from Hong Kong across eight disciplines-Science, Primary Education, Mathematics, English, Engineering, Computing, Business, and Building. Oxford's SILL (1990) was used to determine the language learning strategies used by those students. Also, in depth-interviews were conducted to determine the reasons for using such strategies. The findings showed that English-majoring students used the most strategies while Computing-majoring students used the fewest strategies. Furthermore, the main reason for using LLSs reported by English-majoring was because of the importance of English to achieve their discipline demands. On the other hand, the Computing students mentioned that they used few strategies due to the lack of interest in learning English.

Tsan (2008) investigated the relationship between several factors (including academic major) and the use of language learning strategies among 330 students (212 English education major students and 118 non-English education major students at National Taiwan Normal University. The research instrument was the Strategy Inventory for Language Learning (SILL) by Oxford (1990). The study concluded that English-majoring students used language learning strategies more significantly than did non- English majoring students especially in using metacognitive strategies.

In Saudi Arabia, McMullen (2009) carried out a study to explore the effect of academic major on the use of language learning strategies among the Saudi students at King Abdulaziz University-Saudi Arabia. The subjects of this study were 165 students from two different disciplines Computer Science and Management Information System. The research instrument was the Strategy Inventory for Language Learning (SILL) by Oxford (1990). The findings revealed that Computer Science students used slightly more LLSs than Management Information Systems students.

Table 2.5: Related Studies on Language Learning Strategies and Academic Major

Scholar	Year	Location	Research Instrument	Sample	Findings
Oxford and Nyikos	1989	USA	121-item version of SILL	1200 students	Education, Social Science, and humanities students have used more strategies than other students from other disciplines.
Rong	1999	China	Strategy Inventory for Language Learning (SILL) by Oxford (1990)	87 English majoring students and 84 science-majoring students	English –majoring students have used affective, social, compensation, and cognitive strategies more than science-majoring students.
Peacock and Ho	2003	Hong Kong	Strategy Inventory for Language Learning (SILL) by Oxford (1990) and in –depth interviews	1006 students from Hong Kong across eight disciplines	English-majoring students used the most strategies while computing-majoring students used the fewest strategies. -English-majoring students used more strategies because of the importance of English to achieve their discipline demands. - The Computing students mentioned that they used few strategies due to the lack of interest in learning English.
Tsan	2008	Taiwan	Strategy Inventory for Language Learning (SILL) by Oxford (1990)	330 students (212 English education major students and 118 non-English majors)	English-majoring students used language learning strategies more significantly than did non-majoring students especially in using metacognitive strategies.
McMullen	2009	Saudi Arabia	Strategy Inventory for Language Learning (SILL) by Oxford (1990)	165 students from two different disciplines (Computer Science and Management Information System)	Computer Science students used slightly more LLSs than Management Information Systems students.

The review of the studies carried out on language learning strategies and academic major have revealed the importance of academic major in employing the language learning strategies among learners. The results of the previous researches have all concurred that English-majoring students employ more language learning strategies

than other students from other disciplines. In addition, only one study (Peacock and Ho 2003) used a qualitative instrument (in-depth interviews) in order to explore the reasons for employing such strategies. Hence, more qualitative studies are needed on this field in order to give a better understanding to such relationship.

In sum, the above sections has discussed the language learning strategies in terms of its definitions, classifications, factors affecting the use of language learning strategies, and some research works which are relevant to each factor. However, the success of English language learning depends on English vocabulary learning which constitutes a sub-class of language learning. Vocabulary is considered as an essential part of learning any language and it plays a significant role to language learners. Vocabulary is necessary in order to convey and label actions, objects, and ideas and without which, the intended meaning cannot be conveyed (Ghazal, 2007). The aforementioned concept leads us to discuss and explain vocabulary learning in the ESL and EFL contexts due to its importance in the process of learning.

2.5 English Vocabulary Learning

Vocabulary learning constitutes a significant part of any language learning. Mastering the learning of vocabulary will enhance achieving the goal of communicative competence. Some people believe that the process of learning vocabulary is easy while others think that language learners often face difficulties in recalling the vocabulary needed to achieve fluency in a second or a foreign language (Oxford 1990). Vocabulary learning is difficult to master due to the fact that words represent various and complicated meanings at the same time (Hiebert and Kamil 2005). In fact, Hiebert and Kamil 2005 argue that the native speakers of English

cannot understand all the words in their own language or use them properly because of the different sets of vocabulary for different purposes.

2.5.1 Vocabulary Learning Process

Vocabulary learning consists of different categories. Hatch and Brown (1995) distinguish between two types of vocabulary learning, namely intentional learning and incidental learning. Intentional learning is prepared by the student or teacher while incidental learning is a production of learning something else. Another distinction was made by Crow and Quigley 1985, Hatch and Brown 1995, and Meara 1994 with regards to vocabulary learning. This distinction concerns receptive and productive vocabulary. Receptive vocabularies are words which are recognizable and understandable by learners when they occur in a context, but cannot be used appropriately by the learner. Productive vocabularies are words which are not only recognizable and understandable by the learners themselves but they can use them properly as well. In fact, receptive vocabulary is usually attached to incidental learning, and productive learning is linked with intentional learning.

Nation (1990) categorizes the process of learning vocabulary into two types, direct and indirect vocabulary learning. Direct vocabulary learning refers to the situations in which learners do activities and exercises such as vocabulary games, and word building exercises which concentrate on vocabulary. Indirect vocabulary learning focuses on other features which normally are the message conveyed. Nation (1990) states that the extensive vocabulary learning can occur if the amount of ambiguous words remains low in messages even though the learners' attention is not toward vocabulary learning.

Carter and McCarthy (1988) identify some of the features that could influence the vocabulary learning process and make words learning difficult. They point out that the effective learning of vocabulary is attributed to the teachers' comprehension and learners' realization of the difficulties of words. As a result, the teachers' role must be considered in the process of vocabulary learning. However, the difficulty of learning words can be attributed to a number of possible reasons and the complexity of the language learning process; these reasons are difficult to be categorized properly (Carter and McCarthy, 1988).

Likewise, Nation (1990) reports some of the factors that could affect the process of learning words. Firstly, the previous experience of English among learners and their mother tongue play an effective role in learning new vocabulary. In fact, the learners' mother tongue influences the acquisition of a second or a foreign language vocabulary through the overlapping occurred between the first and second language vocabulary. For example, learning the function and meaning of a word can be difficult since words rarely correspond exactly to a word of another language.

Secondly, the way of learning and teaching new words leads to some difficulties in learning a second or foreign language vocabulary. Nation (1990) states that the improper arrangement of the learning situations causes problems in learning vocabulary. He also indicates that teaching has three influences on the process of teaching vocabulary namely, positive, neutral, and negative. The learner moves slowly towards developing the language when the effect is positive. When the influence is neutral, nothing is learned. In case of negative effect, learning happens

but the learning will have negative influence on what has been taught or what is going to be taught in the future (Nation, 1990).

Finally, the degree of difficulty of words which means that some words are easier to learn than others would constitute the third obstacle in learning vocabulary. For example, verbs and adverbs are often harder to learn than adjectives and nouns. Furthermore, recognizing a word and remembering its meaning is easier to learn than producing the word at the proper time. The teacher's role is to reduce that difficulty and to pay an adequate attention to recognize it when it occurs (Nation 1990).

Laufer (1997) has also focused on the factors influencing the process of learning a second or a foreign language vocabulary. She mentioned numerous factors which lead to the difficulty in learning a word. For instance, length, phonological factors, multiple meaning, abstractness, and semantic features have an influence on vocabulary learning. The process of learning a second or a foreign language demands the employment of vocabulary learning strategies which shifted the focus from the teacher-centered approach to the learner-centered approach in language learning (Schmitt, 2000).

2.5.2 The Importance of Vocabulary

As mentioned earlier in the first chapter, it is widely recognized that vocabulary is one of the most important elements in learning a second or a foreign language; nobody can communicate effectively with a satisfactory amount of vocabulary (McCarthy, 1990). Also, Nation (1990) points out that the difficulties which learners face in language use are attributed to the lack of vocabulary knowledge. A limited

amount of vocabulary would lead to some difficulties for learners to express their feelings and thoughts (Siriwan, 2007). Kitajima (2001) asserts that without words that label actions, objects, and concepts, one would not be able to express the intended meanings. “The more words one is able to use correctly, the better one will be able to express oneself easily and with self-confidence and to understand the world one lives in” (Nandy, 1994, p. 1).

Vocabulary is seen as the most important component when compared to other language components such as grammar. Wilkins (1972 p.111) states that “Without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed”. Similarly, Flower (2000, p. 5) indicates that “Words are the most important things students must learn. Grammar is important, but vocabulary is much more important”. This is in line with Lewis (1993, p. 115) who shows the importance of vocabulary as “the center of language teaching since language consists of ‘grammaticalized lexis, not lexicalized grammar’ and ‘grammar, as structure, is subordinate to lexis”.

Furthermore, many scholars have asserted the importance in the communication situations. It is obvious that there is a consensus on the importance of vocabulary in learning to communicate efficiently while reading, writing, speaking, and listening. Lewis (1993) views the importance of vocabulary as a basic component for daily communication. He points out that inability to recognize the words used by those who address them; they would be not able to participate in the conversation even if they know the morphology and syntax. Krashen and Terrell (2000) indicate that

learners must be able to learn words and produce lexical items to express ideas, ask for information, and convey the intended meaning.

In addition, Schmitt (2000) affirms that vocabulary is central to the acquisition of a second or a foreign language and to communicative competence. Vocabulary and lexical items are at the core of learning and communication. No amount of grammatical or other type of linguistic knowledge can be employed in communication or discourse without the mediation of vocabulary because vocabulary is shown to focus much more than knowledge of single words. Since learners not only communicate in words but also they do most of their thinking in words because words are the tools they use to think, to express ideas and feelings, as well as to explore and analyze the world around them; therefore, wrong vocabulary frequently interferes with communication, and communication breaks down when learners do not use the right words (Smith, 1998).

It is apparent that from the discussion above that vocabulary is considered as crucial part for learners to be successful in their academic study and their social life. Also, the aforementioned scholars have asserted that vocabulary plays a dominant role in understanding and learning language and in communication situations as well. Knowing a large amount of vocabulary enables learners to express their ideas, meanings, and feelings. The process of learning a second or a foreign language demands the employment of vocabulary learning strategies which shifted the focus from the teacher-centered approach to the learner-centered approach in language learning (Schmitt, 2000).

2.5.3 Vocabulary Learning Strategies

Vocabulary knowledge is considered as the intrinsic part in learning language, and vocabulary is the building block of language. Vocabulary enables learners to communicate effectively in face-to-face conversations, class activities, and written texts (Williams, 2006). The learning of a second or a foreign language depends critically on the improvement of the second or foreign language vocabulary. Recently, scholars have shifted their concentration to the demands of second language or foreign language learners in order to develop their vocabulary knowledge (Singleton, 1999; Schmitt, 2000). Vocabulary learning strategies are one part of language learning strategies which construct a part of general learning strategies (Nation, 2001). Oxford (1990) indicates that the study of vocabulary learning strategies would enhance the learners to be autonomous and self-directed learners; it encourages learners to be self-responsible in their learning, obtaining confidence, involvement, and proficiency.

2.5.4 Definition of Vocabulary Learning Strategies

The definition of vocabulary learning strategies is highly related to language learning strategies definition (Catalan, 2003). Many scholars provide different definitions of vocabulary learning strategies (see Table 2.6, page 73). Sokmen (1997, p. 237) defines vocabulary learning strategies as “actions made by learners in order to help them to understand the meaning of a word, learn them, and to remember them later”. Cameron (2001, p. 92) views vocabulary learning strategies as “the actions that learners take to help themselves understand and remember vocabulary items”.

Similarly, Schmitt (1997, p. 203) claims that vocabulary learning strategies are “knowledge about the mechanisms (processes, strategies) used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode”. Intaraprasert (2004, p. 9) offers another definition of vocabulary learning strategies as “any set of techniques or learning behaviors, which language learners reported using in order to discover the meaning of a new word, to retain the knowledge of newly-learned words, and to expand their knowledge of vocabulary”.

Table 2.6: Definition of Vocabulary Learning Strategies

Scholar	Year	Definition
Sokmen	1997	"Actions made by the learners in order to help them to understand the meaning of a word, learning them, and to remember them later" (p. 237).
Schmitt	1997	“Knowledge about the mechanisms (processes, strategies) used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode” (p. 203).
Cameron	2001	“The actions that learners take to help themselves understand and remember vocabulary items” (p. 92).
Intaraprasert	2004	“Any set of techniques or learning behaviors, which language learners reported using in order to discover the meaning of a new word, to retain the knowledge of newly-learned words, and to expand their knowledge of vocabulary” (p. 9).

Table 2.6 lists the various definitions of vocabulary learning strategies which were proposed by different researchers. Generally, these definitions refer to vocabulary learning strategies as mechanisms, techniques, steps, operations, processes, thoughts, or behaviors employed by learners in order understand, learn, remember, and

discover the meaning of new or ambiguous words. The definition provided by Schmitt (1997) will be adopted because it is the most comprehensive definition of vocabulary learning strategies. Schmitt (1997) divides the process of learning vocabulary as: find, retain, and use. Therefore, Schmitt's definition would be the most suitable definition for the current study in order to achieve its main objectives.

2.5.5 Classification of Vocabulary Learning Strategies

Knowing a large amount of vocabulary with their meanings needs a variety of vocabulary learning strategies. Schmitt (2000) claims that the use of vocabulary learning strategies will vary among learners due to their own characteristics and the main goal for learning, whether to understand it (reading and listening), or produce it (writing and speaking). Furthermore, Gu and Johnson (1996) point out that the use of VLS involves selecting the most proper strategy from a range of known options and deciding how to pursue the strategy and when to switch to another strategy.

Consequently, diverse contributions have been made to classify vocabulary learning strategies. The following section the classification systems of vocabulary learning strategies proposed by different scholars including Cohen (1987; 1990), Rubin and Thompson (1994), Stoffer (1995), Gu and Johnson (1996), Lawson and Hogben (1996), Schmitt (1997), Weaver and Cohen (1997), Cook (2001), Decarrico (2001), Nation (2001, 2005), Hedge (2000), Pemberton (2003), and Intaraprasert (2004). These classification systems are arranged chronologically based on the year of publication.

2.5.5.1 Cohen's Taxonomy (1987; 1990)

The vocabulary learning strategies that have been classified by Cohen (1987, p. 43; 1990, pp. 21-37) consists of three major categories as follows:

Category 1: Strategies for Remembering Words

- 1) Using Rote-repetition by repeating the word and its meaning until it seems to have stuck;
- 2) Using Mnemonic Associations:
 - a) By linking the word to the sound of a word in the native language to the sound of a word in the language being learned, or to the sound of a word in another language;
 - b) By attending to the meaning of a part or several parts of the word;
 - c) By noting the structure of part or all of the word;
 - d) By placing the word in the topic group to which it belongs;
 - e) By visualizing the word in isolation or in a written context;
 - f) By linking the word to the situation in which it appeared;
 - g) By creating a mental image of the word;
 - h) By associating some physical sensation to the word;
 - i) By associating the word to a keyword; and
 - j) By using of mnemonic device in order to create a cognitive link between an unfamiliar foreign language word or its translation by means of a cognitive mediator.

Category 2: Semantic Strategies:

- 1) Thinking of synonyms so as to build a network of interlinking concepts;

- 2) Clustering words by topic group or type of word; and
- 3) Linking the word to the sentence in which it was found or to another sentence;

Category 3: Vocabulary Learning and Practicing Strategies

- 1) Word and Structure Analysis (analyze the word according to its roots, affixes, and inflections as a way to understand its meaning);
- 2) The Learning of Cognates (words in two languages which are from the same source);
- 3) Using a Dictionary;
- 4) The Use of Flash Cards;
- 5) Grouping; and
- 6) Cumulative Vocabulary Study.

(Cohen, 1987, p. 43; 1990, pp. 21-37)

The vocabulary learning strategies classification proposed by Cohen (1987; 1990) includes three major categories namely, remembering, semantic, and practicing strategies in order to deal with the new vocabulary items. Those strategies have been found to share some characteristics. Therefore, they have been put together to create the new main three categories.

2.5.5.2 Rubin and Thompson's Taxonomy (1994)

Rubin and Thompson's (1994, pp. 79-82) taxonomy of vocabulary learning strategies are presented below:

Category 1: Direct Approach

- Put the words and their definitions on individual cards;
- Say the words aloud or write them over and over again as they study;
- Compose sentences with the words they are studying;
- Tape record the words and their definition, if they prefer to learn through the ear; and
- Color-code words by parts of speech, if they prefer to learn through the eye.

Category 2: Use Mnemonics

- Use rhyming;
- Use alliteration;
- Associate words with the physical world;
- Associate words with their functions;
- Use natural word associations, such as opposites;
- Learn classes of words;
- Learn related words;

- Group words by grammatical class; and
- Associate words with context.

Category 3: Indirect Approach

- Read a series of texts on a related topic;
- Guess the meaning of words from context; and
- Break up the word into components.

(Rubin and Thompson, 1994, pp. 79-82)

Rubin and Thompson (1994) formulated three main categories of vocabulary learning strategies which have been reported by language learners to be efficient. These include direct approach, use mnemonics, and indirect approach. In direct method, language learners focus and pay attention on learning words in completing different vocabulary exercises or learning words in lists. Mnemonics are techniques used in order to make memorization easier by organizing individual items into patterns and linking things together. Indirect approach involves learning words

through listening and reading. Hence, it is important to focus on strategies for dealing with anonymous words indirectly instead of memorizing them.

2.5.5.3 Stoffer's Taxonomy (1995)

Stoffer's (1995) classification was basically based on her research entitled "University Foreign Language Students' Choice of Vocabulary Learning Strategies as Related to Individual Difference Variables". The findings of this study showed 53 strategies related to vocabulary learning which were classified by factor analysis consisting of the following strategies:

- 1) Strategies involving authentic language use;
- 2) Strategies used for self-motivation;
- 3) Strategies used to organize words;
- 4) Strategies used to create mental linkages;
- 5) Memory strategies;
- 6) Strategies involving creative activities;
- 7) Strategies involving physical action;
- 8) Strategies used to overcome anxiety;
- 9) Visual/auditory strategies

(Stoffer, 1995, p. 48)

The vocabulary learning strategies categories of Stoffer's (1995) classification were formulated based on a questionnaire which contained 53 items. The aim of this questionnaire was to measure specifically vocabulary learning strategies. The study involved 707 university language learners at the University of Alabama enrolling Japanese, German, Russian, Spanish, and French as foreign languages. This research has shown that the vocabulary learning strategies used by university foreign language learners were related to several individual differences such as previous language learning experience, language studied, previous vocabulary learning strategies instruction, gender, age, and course level. Stoffer (1995) offered an

empirical basis for category assignment based on factor analysis. However, her classification was criticized due to the absence of detailed information to support the categories (Kudo, 1999).

2.5.5.4 Gu and Johnson's Taxonomy (1996)

The vocabulary learning strategies classification by Gu and Johnson (1996, p. 51) have been categorized as follows:

- 1) Beliefs about vocabulary learning;
- 2) Metacognitive regulation;
- 3) Guessing strategies;
- 4) Dictionary strategies;
- 5) Note-taking strategies;
- 6) Memory strategies (rehearsal);
- 7) Memory strategies (encoding);
- 8) Activation strategies

(Gu and Johnson, 1996, p. 51)

Gu and Johnson's (1996) taxonomy profiled the beliefs and VLSs used by advanced Chinese EFL learners. The vocabulary learning strategies developed by Gu and Johnson (1996) were grouped into eight categories as mentioned above. This classification is considered as one of the most comprehensive VLS classifications and sought to establish the strategies used by Chinese EFL university students. Gu and Johnson found that students with large amount of vocabulary, though not necessarily higher proficiency, use more strategies. The eight categories of their classification might be classified into cognitive, metacognitive, activation, and

memory strategies (Ghazal, 2007). However, the strategies already mentioned are arguable and do not meet the definition of strategies (Alqahtani, 2005).

2.5.5.5 Lawson and Hogben's Taxonomy (1996)

Lawson and Hogben (1996, pp.118-119) created a vocabulary learning strategies taxonomy based on a study conducted on 15 university students learning Italian in Australia. Think-aloud and interviews were used as instruments in this study. The vocabulary learning strategies are categorized as follows:

Category 1: Repetition

- Reading of related word;
- Simple rehearsal;
- Writing of word and meaning;
- Cumulative rehearsal;
- Testing

Category 2: Word Feature Analysis

- Spelling;
- Word classification;
- Suffix

Category 3: Simple Elaboration

- Sentence translation;
- Simple use of context;
- Appearance similarity;
- Sound link

Category 4: Complex Elaboration

- Complex use of context;
- Paraphrase;
- Mnemonic

(Lawson and Hogben, 1996, pp. 118-119)

Lawson and Hogben's (1996) study which formulated their taxonomy based on a study conducted on 15 female advanced-level university students in Australia studying Italian as a foreign language. The participants were faced with the task of learning 12 Italian words given on index cards. This study focused on the deliberate acquisition of vocabulary. The main instrument used in this study was think-aloud session. Based on the analysis of the transcripts, Lawson and Hogben categorized the vocabulary learning strategies into four main categories with a total of 15 strategies. The correlational analysis indicated that the students who used more strategies recalled more words in a vocabulary test than the students who used a small number of strategies.

The number of vocabulary learning strategies exploited by successful learners was twice as large as that of unsuccessful learners. Despite the substantial contribution of Lawson and Hogben's (1996) taxonomy in identifying the vocabulary learning strategies when learning new words during a think-aloud session, their taxonomy was not able to give an overview of all vocabulary learning strategies at learners' disposal. It only reflects the strategies actually exploited during one particular word-learning task (Ruutemets, 2005).

2.5.5.6 Schmitt's Taxonomy (1997)

Schmitt (1997, pp. 207-208) proposed a vocabulary learning strategies taxonomy based on the language learning strategies taxonomy developed by Oxford (1990, pp. 17-21). The strategy inventory proposed by Schmitt (1997) is illustrated as follows:

Category 1: Strategies for the discovery of a new word's meaning

1) Determination Strategies (DET)

- a) Analyze part of speech;
- b) Analyze affixes and roots;
- c) Check for L1 cognate;
- d) Analyze any available pictures or gestures
- e) Guess meaning from textual context
- f) Use Bilingual dictionary
- g) Use Monolingual dictionary
- h) Word lists
- i) Flash cards;

2) Social Strategies (SOC)

- a) Ask teacher for L1 translation
- b) Ask teacher for paraphrase or synonym of new word
- c) Ask teacher for a sentence including the new word
- d) Ask classmates for meaning
- e) Discover new meaning through group work activity;

Category 2: Strategies for consolidating a word once it has been encountered

1) Social Strategies (SOC)

- Study and practice meaning in a group;
- Teacher checks students' flash cards or word lists for accuracy
- Interact with native speakers

2) Memory Strategies (MEM)

- Connect word to a previous personal experience;
- Associate the word with its coordinates;
- Connect the word in its synonyms and antonyms;

- Use semantic maps;
- Image word form;
- Image word's meaning;
- Use Keyword Method;
- Group words together to study them;
- Study the spelling of a word;
- Say new word aloud when studying;
- Use physical action when learning a word
- Study word with a pictorial representation of its meaning
- Associate the word with its coordinates
- Use scales for gradable adjectives
- Peg method
- Loci method
- Group words together spatially on a page
- Use new words in sentences
- Group words together within a storyline
- Study the sound of a word
- Underline initial letter of the word
- Configuration
- Affixes and roots (remembering)
- Part of speech (remembering)
- Paraphrase the word's meaning
- Use cognates in study
- Learn the word of an idiom together
- Use semantic features grids

3) Cognitive Strategies (COG)

- Verbal repetition;

- Written repetition;
- Word lists;
- Put English labels on physical objects;
- Keep a vocabulary notebook
- Flash cards
- Take notes in class
- Use the vocabulary section in your textbook
- Listen to tape of word lists

4) Metacognitive strategies (MET)

- Use English-language media (songs, movies, newscasts, etc.);
- Testing oneself with word tests;
- Skip or pass new word
- Use spaced word practice
- Continue to study word over time

(Schmitt, 1997, pp. 207-208)

As shown above, the vocabulary learning strategies taxonomy by Schmitt (1997) has been classified into two main classes. The first class contains strategies that are useful for the initial discovery of a word's meaning. These strategies include determination and social strategies. The second class consists of strategies useful for consolidating a word once it has been encountered. These strategies encompass social, memory, cognitive, and metacognitive strategies. The social strategies are included in the two categories because they can be used for both purposes.

Schmitt defines each category as follows. Determination strategies are used "when faced with discovering a new word's meaning without resource to another person's

expertise” (p. 205). Social strategies are used to understand a word “by asking someone who knows it” (p. 210). Memory strategies are “approaches which relate new materials to existing knowledge” (p. 205). The definition of cognitive strategies was adopted from Oxford (1990) as “manipulation of transformation of the target language by the learner” (p. 43). Finally, Schmitt defines metacognitive strategies as “a conscious overview of the learning process and making decisions about planning, monitoring or evaluating the best ways to study” (p. 205).

Schmitt’s (1997) taxonomy is the extensive, comprehensive, and elaborate classification of vocabulary learning strategies to date (Kudo, 1999; Catalan, 2003; Ruutemets, 2005). Schmitt views his taxonomy as “a dynamic working inventory which suggests the major strategies” (p. 204). Schmitt’s taxonomy is organized in the framework with two systems. Firstly, it is based on Oxford’s (1990) classification and includes four of her categories: memory, social, cognitive, and metacognitive. Secondly, Schmitt distinguishes between discovery and consolidation strategies offered by Nation (1990). The former helps learners to find out the meaning of a word when introduced for the first time and the latter aids memorization of the word after it has been encountered.

Furthermore, Schmitt’s (1997) taxonomy has been used by many scholars (Kudo, 1999; Catalan, 2003) in their research works. In the current study, the vocabulary learning strategies of JUST students will be also compared to Schmitt’s (1997) taxonomy. Catalan (2003) shows several advantages of using Schmitt’s taxonomy as a research instrument as follows:

- It can be standardized as a test;
- It can be used to collect the answers from students easily;
- It is based on the theory of learning strategies as well as on theories of memory;
- It is technologically simple;
- It can be used with learners of different ages, educational backgrounds, and target languages;
- It is rich and sensitive to the variety of learning strategies;
- It allows comparison with other studies.

(Catalan, 2003, p. 60)

2.5.5.7 Weaver and Cohen's Taxonomy (1997)

The categorization of vocabulary learning strategies by Weaver and Cohen (1997) includes the following strategies:

Category 1: Categorization

- Categorize vocabulary items according to meaning,
- Categorize vocabulary items according to part of speech,
- Categorize vocabulary items according to formal vs. informal language forms,
- Categorize vocabulary items according to alphabetical order, or types of clothing or food;

Category 2: Keyword mnemonics

- Find a native-language word or phrase with similar sounds,
- Create a visual image that ties the word or phrase to the target-language word;

- Learn ‘*pato*’ in Spanish by selecting the similar-sounding English word ‘pot’
- Create a mental image of a duck with a pot on its head;

Category 3: Visualization

- Learn vocabulary items through mental images, photographs, charts, graphs, or the drawing of pictures;

Category 4: Rhyme/rhythm

- Make up songs or short ditties;

Category 5: Language transfer

- Use prior knowledge of native, target, or other language structures;

Category 6: Repetition

- Repeat words over and over to improve pronunciation or spelling,
- Try to practice the words using all four language skills:
 - write new sentences,
 - make up stories using as many new words as possible,
 - read texts that contain those new words,
 - purposely use the words in conversation and listening for them as they are used by native speakers.

(Siriwan, 2007, p. 52)

Weaver and Cohen's taxonomy has been classified into six major classes: Categorizations, Keyword mnemonics, Visualization, Rhyme/Rhythm, Language Transfer, and Repetition. The strategies have been grouped and classified based on their study, “Strategies-Based Instruction: a Teacher-Training Manual”. Weaver and Cohen (1997) have made an interesting attempt to classify the vocabulary learning strategies used by learners. However, the strategies were found to share some similar characteristics of words in terms of word meaning, word form, and word use (Siriwan, 2007).

2.5.5.8 Hedge's Taxonomy (2000)

Hedge (2000, p. 117-118) emphasized on cognitive strategies in understanding and learning new vocabulary items. Therefore, she clustered the vocabulary learning strategies as follows:

Category 1: Cognitive Strategies

- Making associations;
- Learning words in groups;
- Exploring range of meaning;
- Using key words. A keyword is a word chosen from the mother tongue which sounds like the new word in the second or native language, and where it is possible to make some kind of association between the two words;

- Reading on for evidence in the context of the text;
- Inference strategy

Category 2: Metacognitive Strategies

- Consciously collecting words from authentic contexts;
- Making word cards;
- Categorizing words into lists;
- Reactivating vocabulary in internal dialogue;
- Making a word-network of vocabulary associated with a particular item.

(Hedge, 2000, pp. 117-118)

The classification of vocabulary learning strategies by Hedge (2000) comprises two primary categories: Cognitive and Metacognitive strategies. Cognitive strategies involve strategies used to understand how vocabulary works. Metacognitive strategies concern strategies for preparing, planning for learning, selecting and using learning strategies, monitoring strategy use, harmonizing various kinds of strategies, and evaluating the effectiveness of strategy use and learning. Nevertheless, this taxonomy is not comprehensive enough and failed to shed light on other vocabulary

learning strategies which can be used by learners such as memory, social, and determination strategies (Ruutemets, 2005).

2.5.5.9 Cook's Taxonomy (2001)

The categorization of vocabulary learning strategies by Cook (2001, pp. 66-73) involves the following strategies:

Category 1: Strategies for getting meaning

- Guessing from situation or context;
- Using a dictionary;
- Making deductions from the word-form;
- Linking to cognates.

Category 2: Strategies for acquiring words

- Repetition and rote learning;
- Organizing words in the mind;
- Linking to existing knowledge

(Cook, 2001, pp. 66-73)

Cook (2001) identifies two major classes of vocabulary learning strategies which include strategies for getting meaning, and strategies for acquiring words. In order to get the meaning of words, learners would guess the meaning from context, use dictionary, make deduction from the word-form, and link the items to cognates. For acquiring words, learners would repeat the new vocabulary items, organize words in the mind, and link the new items to existing knowledge. Cook's (2001) taxonomy suggests implications on how teaching could fit the language learners' ways of learning vocabulary items which can be beneficial for language teachers and curriculum practitioners (Siriwan, 2007).

2.5.5.10 Decarrico's Taxonomy (2001)

The vocabulary learning strategies proposed by Decarrico (2001) involves the following strategies:

Category 1: Guessing Meaning form Context;

Category 2: A Mnemonic Device or the Keyword Method;

Category 3: Vocabulary Notebooks;

Category 4: Other Learner Strategies:

- Check for an L1 cognate;
- Study and practice in peer groups;
- Connect a word to personal experience or previous learning;
- Say a new word aloud when studying;
- Use verbal and written repetition;
- Engage in extended rehearsal (review new material soon after initial learning and then at gradually increasing intervals)

(Siriwan, 2007, p. 54)

As noticed above, Decarrico's (2001) taxonomy for vocabulary learning strategies is divided into four categories which include: strategies for guessing meaning from context, a mnemonic device or the keyword strategies, vocabulary notebooks, and other learner strategies such as check for an L1 cognate, use verbal and written repetition, and say a new word aloud when studying. She indicated that language learners are not taught the majority of words. Therefore, vocabulary learning is more likely to be mainly implicit (incidental). She further suggested that strategies should aid both in discovering the meaning of new word and in consolidating a word once it has been encountered. Thus, language learners should approach independent learning of vocabulary by using a combination of extensive reading and self-study strategies (Decarrico, 2001).

2.5.5.11 Nation's Taxonomy (2001, 2005)

Nation (2001, pp. 217-222; 2005, pp. 589-593, 2005) has offered a categorization for vocabulary learning strategies consisting of three major groups of strategies as follows:

Category 1: Planning: (Choosing what to focus on and when to focus on it)

- Choosing words;
- Choosing the aspects of word knowledge;
- Choosing strategies; and
- Planning repetition

Category 2: Sources: (Finding information about words)

- Analyzing the word;
- Using word parts;
- Learning from word cards;
- Using context;
- Using a dictionary;
- Consulting a reference source in L1 and L2; and
- Using parallels in L1 and L2

Category 3: Processes: (Establishing knowledge)

- Noticing;
- Retrieving; and
- Generating

(Nation, 2001, pp. 217-222; 2005, pp. 589-593, 2005)

The main goal of Nation's (2001) taxonomy is "to separate aspects of vocabulary knowledge (what is involved in knowing a word) from sources of vocabulary knowledge, and learning processes" (p. 218). His classification contains three general parts of strategies: planning for vocabulary learning, sources of vocabulary knowledge, and learning processes. The first class (planning for vocabulary learning) involves deciding on where to focus attention, how to focus the attention, and how often to give attention to them. The strategies in this class include choosing words, choosing the aspects of word knowledge, choosing strategies, and planning

repetition. The second major part refers to sources of vocabulary knowledge which contains finding information about unfamiliar words.

The strategies under this class comprise analyzing the word, using context, consulting a reference source in L1 or L2, and using parallels in L1 and L2. The third major category involves learning processes which consists of ways of establishing vocabulary knowledge and making it available for use. The strategies under this category include noticing, retrieving, and generating. From the features of all three main categories of vocabulary learning strategies, they could be assumed that vocabulary learning strategies proposed by Nation (2001; 2005) involve both cognitive and metacognitive strategies since both include a wide range of strategies of different complexity.

2.5.5.12 Pemberton's Taxonomy (2003)

Pemberton (2003) has offered a classification in order to remember the new vocabulary items. This classification comprised the following strategies:

Category 1: Strategies for Learning Vocabulary Memorization

- Say or write the words when learning
- Record the words/phrases one is learning on tape, MD or as audio files, and play them to himself/herself whenever he/she has some spare time
- Ask a native or fluent speaker to record target words for one to practice listening
- Play audiotapes or videotapes repeatedly (e.g. songs or parts of a movie)
- Write the words one is learning on pieces of paper/stick-it notes and put them around one's room/home
- Put the words into sentences
- Connect the new words to words belonging to the same topic or situation that he/she already knows (e.g. in tables, diagrams, or pictures)

- Use the Keyword Method by associating the target word in the foreign language with a word that sounds similar in his/her own language
- Combine the target word with similar-sounding English words to form picture– e.g. ‘mourning (= ‘being sad because of someone’s death’) + ‘morning’ Picture: being sad about someone who died in the morning’
- Use one’s knowledge of the parts or roots of words to remember the meaning

1) Using Words

- Create sentences of one’s own for the words he/she is learning, relating them to his/her own situation
- Write a story that includes all the words one has learned
- Write about the topic using the vocabulary learned, or have a discussion or conversation with a partner, trying to use the words appropriately

2) Recycling Words one has learned

- Follow a news story that is printed or broadcast every day for several weeks
- Focus on one type of news story that occurs almost every day
- Watch movies or read books or magazines on particular topics
- Read books at particular vocabulary levels
- Read several books written by the same author (e.g. Jane Austen)
- Read several books featuring the same characters (e.g. Sherlock Holmes)

Category 2: Strategies for Reducing the ‘Forgetting Problem’

- Learn words repeatedly, with increasing intervals between learning sessions
- Have the words one wants to learn with him/her whenever he/she goes, so that he/she can use any ‘dead’ time. Word cards or vocabulary notebooks are useful
- Set aside a regular time for vocabulary learning or memorizing (e.g. just before going to bed, or travelling to and from university)
- Spend more time on the words that one finds difficult

(Siriwan, 2007, p. 56)

Pemberton (2003) developed his taxonomy of vocabulary learning strategies because of the problem which is faced most of the language learners. This problem involves

forgetting what have been learned easier. Therefore, he proposed a variety of strategies related to vocabulary learning. His classification contains two main classes: strategies for learning vocabulary items, and strategies for reducing the ‘forgetting problem’. Vocabulary learning strategies proposed by Pemberton (2003) seem to provide some solutions to remember words for a long period of time, to learn them so well that they become ‘known’, and fixed in the learner’s memory. Moreover, these strategies seem to promote language learners to individual exertion in their independent vocabulary learning.

2.5.5.13 Intaraprasert’s Taxonomy (2004)

The categorization of vocabulary learning strategies suggested by Intaraprasert (2004) includes the following strategies:

Category 1: Strategies to Discover the Meaning of New Vocabulary Items

DMV 1: Use a Thai-English dictionary;

DMV 2: Use an English-Thai dictionary;

DMV 3: Use an English-English dictionary;

DMV 4: Guess the meaning from the context;

DMV 5: Ask one’s classmate or friend;

DMV 6: Ask one’s teacher;

DMV 7: Ask someone other than one’s teacher, classmate or friend;

DMV 8: Look at the word roots, prefixes or suffixes;

DMV 9: Use an on-line dictionary;

DMV 10: Use an electronic dictionary.

Category 2: Strategies to Retain the Knowledge of Newly-learned Vocabulary Items

RKV 1: Memorize with or without a word list;

RKV 2: Keep a vocabulary notebook;

RKV 3: Group words based on the synonymity or antonymity;

RKV 4: Associate new words with the already-learned ones;

RKV 5: Use new words in writing;

RKV 6: Use new words to converse with peers;

RKV 7: Speak Thai with English loan-words;

- RKV 8:** Keep words as the computer background;
- RKV 9:** Keep word cards or word charts in one's bedroom;
- RKV 10:** Keep words as rhymes or songs;
- RKV 11:** Use pictures

Category 3: Strategies to Expand the Knowledge of Vocabulary Items

- EKV 1:** Listen to a radio program in English especially the one for language learning
- EKV 2:** Watch a television program in English especially the one for language learning
- EKV 3:** Surf the Internet especially the websites for language learning
- EKV 4:** Read different types of different English printed materials, e.g. leaflets, brochures, textbooks or newspapers
- EKV 5:** Play games in English, e.g. crossword, or hangman
- EKV 6:** Practice translating from Thai into English and vice versa
- EKV 7:** Watch an English-speaking film with Thai-narrated scripts
- EKV 8:** Attend classes of every module regularly
- EKV 9:** Listen to English songs
- EKV 10:** Do extra vocabulary exercises from different sources, e.g. book, newspapers or the Internet

(Siriwan, 2007, p. 57)

The classification proposed by Intaraprasert (2004) consists of strategies employed by 133 EST students in Thailand. In general, this classification contains three main classes: 1) strategies to discover the meaning of new vocabulary items (DMV), 2) strategies to retain the knowledge of newly-learned vocabulary items (RKV), and 3) strategies to expand the knowledge of vocabulary items (EKV). Intaraprasert demonstrated that three main strategy groups were reported being employed by the participants which included dictionary use, social strategies, and contextual reliance.

2.5.5.14 Summary

Overall, the above sections have described some of the vocabulary learning strategies which have been proposed by various researchers. The vocabulary learning strategies taxonomies have been classified in terms of recognizing new vocabulary

items and the use of new vocabulary items. Though, some of these strategies have been named differently, they shared some concurrent strategies. The most concurrent strategies fallen largely in the Memory category, Metacognitive, Cognitive, Social and Determination categories respectively. The use of such strategies would enhance the learning of vocabulary and facilitate the autonomous of learning as well.

After reviewing the various taxonomies proposed to explore the vocabulary learning strategies employed by learners, the following points could be put forward:

- Most of the classifications of vocabulary learning strategies were developed based on studies carried out to explore the VLSs of adult university-level students.
- The classifications' developers were interested in students' use of VLSs and their perceptions of useful strategies, and the relationship between strategy use and success in language learning.
- The main target group in investigating vocabulary learning strategies of the above mentioned studies was Asian (Taiwanese, Hong Kong, Japanese, and Chinese).
- Various research instruments were used to collect data such as vocabulary proficiency tests, observations, questionnaires, interviews, and think-aloud tasks. The data of these students were analyzed by means of descriptive statistics, correlational, cluster, and factor analysis.

The vocabulary learning strategies employed by JUST students were measured compared to Schmitt's taxonomy (1997) due to numerous reasons. These reasons

include the ability to be standardized as a test, the ease of use in order to get information from students, based on language learning strategies theories; can be used with all students regardless of their educational background and target languages, technologically simple, its richness and flexibility to the various kinds of learning strategies, and can be compared to other studies (Catalan 2003).

2.5.6 Metacognitive Strategies

Metacognition has long been recognized as the most significant component in language learning (Pintrich, 2002). The term metacognition first appeared in 1976 by the developmental psychologist John Flavell. Flavell defined metacognition as thinking about thinking. Its scholarly definition comes from cognitive psychology that links metacognition to the person's knowledge regarding one's own cognitive processes and products or anything related to them. Active monitoring, consequent regulation, and synchronism of these processes to achieve a goal also seem to be the necessary components of metacognition (Flavell, 1976; Goh, 2008).

As illustrated by Flavell's definition, metacognition refers to self-awareness and how students perceive themselves and their own learning (Cross and Steadman, 1996; Pintrich, 2002). In addition, metacognitive development can be described as conscious development in one's metacognitive abilities, such as the move to greater knowledge, awareness and control of one's learning, selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies, and changing learning behaviors and strategies when necessary (Ridley, Schutz, Glanz, and Weinstein, 1992).

According to Flavell (1987), metacognitive knowledge can be divided into three areas. The first area involves knowledge of self. This knowledge incorporates what one believes to be true about oneself, and what one sees as personal strengths and weaknesses. This self-knowledge can be beneficial when facing learning tasks: the learner who has an accurate self-knowledge can adapt learning strategies to accommodate any weaknesses.

The second area of metacognition that Flavell (1987) identifies is the knowledge of the learning or cognitive tasks. This knowledge is what learners draw when they face a cognitive task. Different kinds of information require different thinking and learning strategies to deal with them (Pintrich, 2002). Being able to evaluate what the cognitive task is and to select the most beneficial strategy or strategies to handle it are skills required for mastering this area of metacognition (Pintrich, 2002). For instance, reading a passage from a text and interpreting it need different strategies rather than memorize it.

The final area of metacognition that Flavell (1987) addressed is the knowledge that is necessary to learn the various kinds of tasks. He differentiates between (a) cognitive learning strategies (those various strategies such as memorization, rehearsal, and note-taking that students use to acquire the information) and (b) metacognitive strategies (those strategies that are less involved with a specific learning goal and are more with understanding that the learning goal has been achieved). For example, a cognitive strategy might involve memorizing a list of spelling words while a metacognitive strategy would have someone else quiz the learner to ensure the mastery of the list.

2.5.6.1 Metacognitive Strategies and Vocabulary Learning

The use of metacognitive strategies activates learners thinking and leads to improved performance in learning in general (Anderson, 2002). According to Wenden (1998), learners who have metacognitive abilities seem to have the following advantages over others who are not aware of the metacognition role in learning another language:

- 1) They are more strategic learners.
- 2) Their rate of progress in learning as well as the quality and speed of their cognitive engagement is faster.
- 3) They are confident in their abilities to learn.
- 4) They do not hesitate to obtain help from peers, teachers, or family when needed.
- 5) They provide accurate assessments of why they are successful learners.
- 6) They think clearly about inaccuracies when failure occurs during an activity.
- 7) Their tactics match the learning task and adjustments are made to reflect changing circumstances.
- 8) They perceive themselves as continual learners and can successfully cope with new situations.

Metacognitive strategies do not only help learning in general but also have a lot to offer to vocabulary learning specifically (Coskun, 2010). Vandergrift (1997) points out that metacognitive strategies such as analyzing the requirements of a vocabulary learning task, activating the proper vocabulary learning processes required, make appropriate predictions, monitoring their comprehension and evaluating the success

of their approach differentiate between a skilled and a less skilled learner. In a similar vein, Goh (2008) shows some of the positive effects of metacognitive strategy instruction on vocabulary learning. She states that it improves students' confidence and makes them less anxious in the vocabulary learning process. She also believes that weak vocabulary learners in particular benefit much from the strategies' instruction.

Most of the studies (O'Malley and Chamot, 1990; Thompson and Rubin, 1996; Vandergrift, 2003) which attempted to indicate the influence of metacognitive strategies instruction have focused on listening performance in different contexts. O'Malley and Chamot (1990) instructed students from intermediate high school. The students received instruction in metacognitive, cognitive, and a socio-affective strategies. The students were divided into three groups: the first group received instruction in metacognitive strategies, the second group received instruction in cognitive and a socio-affective strategy only, and the third was control group which received no strategy instruction. Results showed that the experimental groups performed better than the control group, and that the metacognitive group had a better performance than the cognitive group on the post-tests.

Thompson and Rubin (1996) studied the influence of metacognitive and cognitive strategy instruction on the listening comprehension performance of American university students learning Russian. The listening scores of the experiment group receiving systematic training in listening strategies were compared to the scores of a similar group who received no instruction over a two-year period. Pre- and post-tests showed that the students who received strategy instruction in listening to video-

recorded texts improved significantly over those who had received no instruction at the end of the two years.

In addition to the previous studies, Vandergrift (2003) trained students in the use of prediction, individual planning, peer discussions, and post listening reflections that made up the metacognitive strategies in beginner elementary school and university contexts in France. Students in both groups were more focused on the advantages of predictions for successful listening, the place of collaboration with a partner for monitoring, and the confidence-building function of this approach for developing listening comprehension ability.

2.5.6.2 Models of Metacognitive Strategy Instruction

In all metacognitive strategy instruction programs, there are some common basic principles that have been listed by Goh (2008). She suggests that these programs should be embedded in the subject matter to ensure connectivity. Another key principle from her perspective is the necessity of informing learners about the usefulness of metacognitive activities to make them exert the initial extra effort. Prolonged training to guarantee the smooth and guaranteed maintenance of the metacognitive activity is another feature they underline. Similarly, Chamot and Rubin (1994) emphasize the importance of discovering and discussing strategies that students already use for specific learning tasks, presenting new strategies by explicitly naming and describing them, explaining why and when these strategies can be used and providing extensive practice. In addition to key principles as indicated above, there are different categorizations of metacognitive strategies resulting in the

appearance of different strategy training models although they seem to share similar stages.

In Anderson's model (2002), metacognitive strategy training is divided into five primary components: preparing and planning, deciding when to use particular strategies, monitoring strategy use, learning how to orchestrate various strategies, and evaluating strategy use. In the preparing and planning components, students are prepared in relation to their learning goal and start thinking about what their goals are and how they will go about accomplishing them. In the process of deciding when to use particular strategies, learners think and make conscious decisions about the learning process and choose the best and most appropriate strategy in a given situation.

In the monitoring strategy component, they need to ask themselves periodically whether or not they are still using those strategies as intended. While learning how to orchestrate various strategies, students coordinate, organize, and make associations among the various strategies available. In the evaluating component, students attempt to evaluate whether what they are doing is effective by means of self-questioning, debriefing discussions after strategies practice and checklists of strategies used to allow the student to reflect through the cycle of learning. At this stage, all the previous stages are evaluated.

Vandergrift (1997) lists four strategy categories, planning, monitoring, evaluation and problem identification, which make up the basics of his model. For planning, he draws attention to an appropriate action plan to deal with difficulties that may hinder

the learner from completing a task successfully. At this stage, he underlines the importance of pre-planning activities that help students make predictions about what to learn and, subsequently, to focus attention on meaning while learning. In his monitoring category, students check consistency with their predictions. In the evaluation category, students evaluate the results of decisions made during a learning task by getting involved in group or class discussions.

Within the problem identification category, Vandergrift (1997) underlines the importance of explicitly identifying the aspect of the task that hinders completion of the vocabulary learning task successfully. He also suggests some teaching techniques to develop students' metacognitive strategy use by illustrating some vocabulary learning activities that are simple and helpful for learners to develop their metacognition. His activities are mostly based on the idea that the regular use of pre-learning, learning and post-learning activities is likely to promote the acquisition of metacognitive strategies. He also suggests using a checklist including two parts as "before learning" and "after learning".

After the pre-listening activities, students complete the first part of the checklist, before listening to evaluate whether they have followed all the necessary steps for successful listening before they begin to listen. After listening and attempting to complete the listening task, students complete the second part, which will help them to evaluate their performance in a systematic fashion, particularly if they had difficulty completing the task. This self-evaluation will help students to adjust their strategies for the following tasks. Room for a written reflection at the bottom of the

instrument encourages students to personally reflect on the process, and state what they will do to improve their performance the next time.

Chamot and Rubin (1994) developed a training model instruments called Cognitive Academic Language Learning Approach (CALLA). It helps teachers to combine language, content, and learning strategies in a carefully planned lesson. In the CALLA model, students' prior knowledge and their habit of evaluation of their own learning seem to be the major principles. This model has five instruction phases as explained below (Chamot and Rubin, 1994, p. 43-44):

- 1) Preparation: students prepare for strategy instruction by identifying their prior knowledge about and the use of specific strategies. For example, setting goals and objectives, identifying the purpose of a learning task, over-viewing and linking with already known materials.
- 2) Presentation: the teacher demonstrates the new learning strategy and explains how and when to use it. For instance, explaining the importance of the strategy and asking students when they use the strategy.
- 3) Practice: students practice using the strategy with regular class activities such as asking questions, cooperating with others, and seeking practice opportunities.
- 4) Evaluation: students self-evaluate their use of the learning strategy and how well the strategy is working for them. For example, self-monitoring, self-evaluating, and evaluating their learning.

- 5) Expansion: students extend the usefulness of the learning strategy by applying it to new situations or learning for them. For instance, arranging and planning their learning.

2.5.7 Factors Affecting the Choice of Vocabulary Learning Strategies

Several studies have been carried out in order to investigate the factors affecting the choice of vocabulary learning strategies (see Table 2.7, page 106). Some studies indicated the effect of gender on using vocabulary learning strategies (Catalan, 2003; Ehrman and Oxford, 1989; Green and Oxford, 1995; Gu, 2002; Ooi and Lee, 1996; Oxford and Nyikos, 1989; Stoffer, 1995; Taichi, 2000). Language proficiency is another factor which affects the use of vocabulary learning strategies (Chen, 1998; Fan, 2003; Kojic-Sabo and Lightbown, 1999; Loucky, 2003; Marefat, 2003; Rasekh and Ranjbary, 2003).

Academic major is a factor that determines the choice of vocabulary learning strategies based on a study conducted by (Gu, 2002). Other factors that could influence the choice of vocabulary learning strategies are: year of study (Taichi, 2000), age (Fan, 2003; Stoffer, 1995), previous language learning experience (Chen, 1998, Stoffer, 1995), preferred learning style (Chen, 1998), motivation (Al-Akaloby, 2001), previous vocabulary learning strategies instruction (Stoffer, 1995), course level (Stoffer, 1995), language studied (Stoffer, 1995).

Table 2.7: Factors Affecting the Choice of Vocabulary Learning Strategies

Factor	Scholar/s
Gender	Catalan, 2003; Ehrman and Oxford, 1989; Green and Oxford, 1995; Gu, 2002; Ooi and Lee, 1996; Oxford and Nyikos, 1989; Stoffer, 1995; Taichi, 2000
Language Proficiency	Chen, 1998; Fan, 2003; Kojic-Sabo and Lightbown, 1999; Loucky, 2003; Marefat, 2003; Rasekh and Ranjbary, 2003
Academic Major	Gu, 2002
Year of Study	Taichi, 2000
Age	Fan, 2003, Stoffer, 1995
Previous language learning experience	Chen, 1998, Stoffer, 1995
Learning style	Chen, 1998
Motivation	Al-Akaloby, 2001
Previous VLSs instruction	Stoffer, 1995
Course level	Stoffer, 1995
Language studied	Stoffer, 1995

Ellis (1994) summarized the factors that affect the choice of vocabulary learning strategies in the past researches (see Figure 2.2). Ellis (1994) indicates that the learners' frequency of vocabulary learning strategies and types of vocabulary learning strategies are affected by two main sets of factors. These sets involve individual differences among learners such as anxiety, attitudes, beliefs, parental encouragement, preferred learning style, major field of study, age, sex/gender, past language learning experience, and motivation. The other set of factors include teaching and learning conditions such as task performed, length of study, language studied, course level, and previous vocabulary learning strategies instruction. The study of the individual factors and characteristics of learners that may affect the

success of language learning would offer insights on the various ways and different rates of employing language learning strategies (Deneme, 2010).

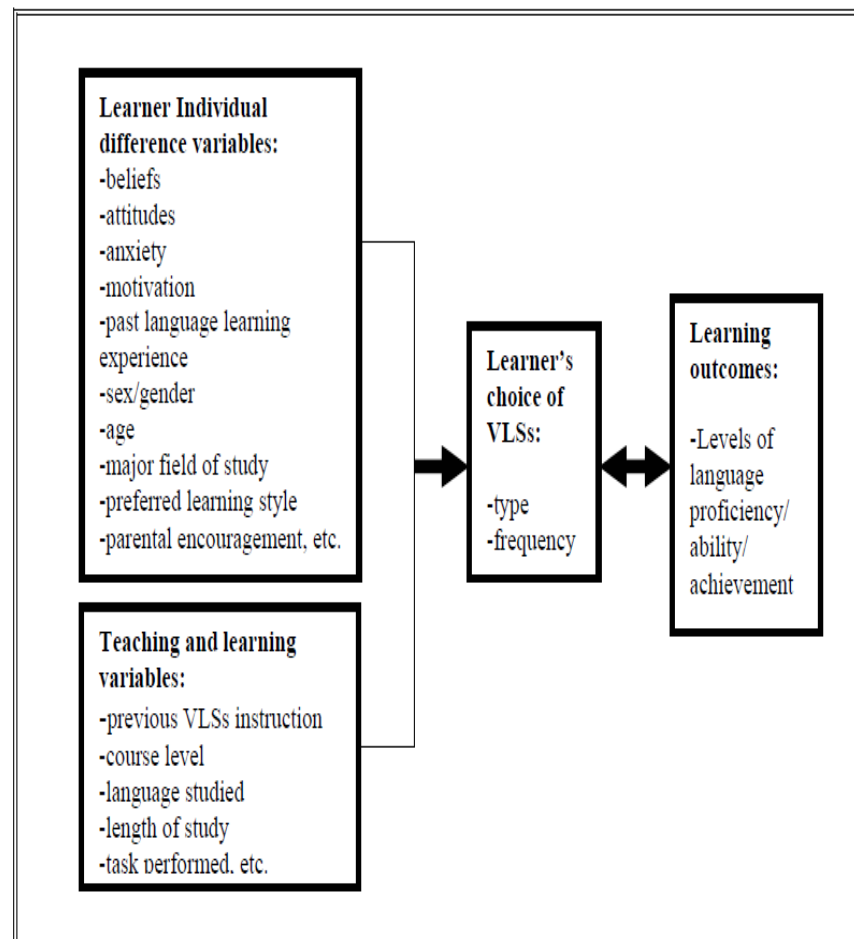


Figure 2.2: Factors Related to Vocabulary Learning Strategies and Learning Outcomes in Past research Works

(Adapted from Ellis, 1994, p. 530)

For the purpose of this research, the researcher decided to investigate the independent variables which are considered by most scholars as the most influential factors affecting the choice of vocabulary learning strategies (Gu, 2002; Catalan, 2003). These factors include gender, language proficiency, academic major and

previous vocabulary learning instruction. Based on this, the following subsection reviews some of the prior studies which dealt with the relationship between those factors and vocabulary learning strategies use.

2.5.7.1 Vocabulary Learning Strategies and Gender

Gender is considered as one of the factors that affect the use of vocabulary learning strategies (Gu, 2002). Gender plays a crucial role in determining the use of vocabulary learning strategies as well as general success in learning English (Catalan, 2003). However, gender has received little attention in the realm of vocabulary learning strategies (Catalan, 2003). Prior studies which deal with gender as a factor affects the use of vocabulary learning strategies reveal different conclusions. Some studies indicate that gender does not affect the choice of strategy (Stoffer, 1995). Other studies conclude that gender has a significant relationship with the students' choice of vocabulary learning strategies (Gu, 2002; Catalan, 2003). Therefore, the purpose of the current research is to examine the effects of gender on the use of vocabulary learning strategies among JUST students to give a better understanding to such relationship. Many studies have been conducted in order to investigate the relationship between gender and the choices of vocabulary learning strategies (see Table 2.8, page 112).

Stoffer (1995) examined the vocabulary learning strategies employed by American students. The subjects of this study were 707 students, who were enrolled in Spanish, Russian, Japanese, German, and French classes at the University of Alabama, USA. Two main instruments were used in this study, Strategy Inventory for Language Learning (SILL) based on Oxford's (1990) classification and Vocabulary Learning

Strategy Inventory (VLSI) developed by the researcher. She demonstrated that the Vocabulary Learning Strategy Inventory (VLSI) contains 53 items clustered into nine categories as follows. Strategies involving authentic language use, strategies involving creative activities, strategies used for self-motivation, strategies used to create mental linkages, memory strategies, visual/auditory strategies, strategies involving physical action, strategies used to overcome anxiety, and strategies used to organize words. The results indicated that there was no significant relationship between gender and the student's choice of strategy. Also, this study shows that the vocabulary learning strategies employed by the students were related to several individual differences such as gender, age, previous vocabulary learning strategies instruction, language studied, course level, and previous language learning experience.

Gu (2002) investigated gender as a factor influences vocabulary learning strategies and its relationship with learning results among Chinese learners in the Chinese EFL context. Three instruments were used to collect the data of this study: Vocabulary Learning Strategy Questionnaire (VLSQ), vocabulary size test, and general proficiency measure. The vocabulary learning strategy questionnaire was developed based on Gu and Johnson's taxonomy (1996) which contains eight strategies. These strategies include Beliefs about vocabulary learning, metacognitive regulation, guessing strategies, dictionary strategies, note-taking strategies, memory strategies (rehearsal), memory strategies (encoding), and activation strategies. The findings revealed that female students used vocabulary learning strategies more frequently than male students. Female students significantly outperformed their male

counterparts in both a vocabulary size test and a general proficiency test. Unlike Stoffer's (1995) study, the findings reported that female students used almost all the vocabulary learning strategies which are relevant to the success in EFL learning.

Similarly, Catalan (2003) examined gender differences in second language vocabulary learning strategies among Spanish learners. The sample comprised 581 Spanish-speaking students (279 males and 302 females) who were learning Basque and English as L2. Once again, a Vocabulary Learning Strategy Questionnaire (VLSQ) was used as the main instrument of this study. The questionnaire was developed based on Schmitt's taxonomy (1997) of vocabulary learning strategies which were categorized into five main strategies: Determination (DET), Social (SOC), Memory (MEM), Cognitive (COG), and Metacognitive (MET). The findings showed a significant relationship between gender and the choice of strategy used. Female students used vocabulary learning strategies more than male students due to the different vocabulary learning behaviors and patterns among those students. These results concur with Gu's (2002) study in that female students use more strategies while it contradicts with Stoffer's (1995) research who pointed out that there is no significant relationship in using vocabulary learning strategies in relation to gender.

Likewise, Si-Xiang and Srikhao (2009) examined the vocabulary learning strategies used among Miao students in senior high school in China. The researchers examined the students' beliefs as well as gender and their influence on using VLSs. The participants of this study involved 30 Miao students (18 male and 12 female) who enrolled in Kaili Senior High School in China. Two research instruments were used in this study: a written questionnaire based on Gu and Johnson's taxonomy (1996) to

elicit Miao students' beliefs about vocabulary learning and their self-reported vocabulary learning strategies, and oral interview to obtain more in-depth information about Miao students' attitudes to English vocabulary learning and English vocabulary learning strategies. Unlike the previous studies concerned with VLSs and gender, the findings of this study have interestingly revealed that male students used cognitive strategies, metacognitive strategies, social strategies, and translation strategies more than female students. Also, male students showed some specific strategies in English vocabulary learning because they take Miao as a first language.

Cengizhan (2011) investigated the frequency of vocabulary learning strategies among Turkish students. The main objective of this study was to identify the use of vocabulary learning strategies among students according to their gender and classes. The subjects of this study were 50 students (30 male and 20 female students) who enrolled in the 10th and 11th classes of Edrine Teacher Training High School/Turkey. For the purpose of this study, a questionnaire containing 41 items was administered to the students and it was analyzed using SPSS program. The findings of this study showed the male students have used metacognitive strategies more frequently than their female counterparts; while female students used the rest of VLSs more frequently than male students.

Table 2.8: Related Studies on Vocabulary Learning Strategies and Gender

Proficiency

Scholar	Year	Location	Research Instrument	Sample	Findings
Stoffer	1995	USA	Vocabulary Learning Strategy Inventory (VLSI) Inventory for Language Learning (SILL)	707 students at Alabama University	There was no significant relationship between gender and the student's choice of strategy
Gu	2002	China	Vocabulary Learning Strategy Questionnaire (VLSQ) Vocabulary size test General proficiency measure	Chinese learners in the Chinese EFL context	Female students have used vocabulary learning strategies more significantly than male students Female students have used almost all the vocabulary learning strategies which are relevant to the success in EFL learning
Catalan	2003	Spain	Vocabulary Learning Strategy Questionnaire (VLSQ)	581 Spanish speaking students (279 males and 302 females)	Female students used more VLSs than male students
Cengizhan	2010	Turkey	Vocabulary Learning Strategy Questionnaire (VLSQ)	50 Turkish students (20 males and 30 females)	Female students used VLSs more frequently in four categories

The studies carried out to find the relationship between gender and the use of vocabulary learning strategies used questionnaire as a main instrument for data collection. However, the questionnaires used in those studies were developed based on different taxonomies. Two studies developed the questionnaire based on Gu and Johnson taxonomy's (1996), (Gu, 2002; Srikhao and Si-Xiang, 2009). Stoffer (1995) administered a questionnaire based on a taxonomy developed by herself. Other study

conducted a questionnaire based on Schmitt's taxonomy (1997) of vocabulary learning strategy (Catalan, 2003). However, other instruments were used in those studies such as Strategy Inventory for Language Learning (SILL) (Stoffer, 1995), vocabulary size test and general proficiency measure (Gu, 2002), and oral interviews (Srikhao and Si-Xiang, 2009).

The results of the prior studies on vocabulary learning strategies and gender are arguable. Some studies found that males use more strategies than females (Srikhao and Si-Xiang, 2009) while other researchers found that females use more strategies than males (Gu, 2002), and others found no significant difference in strategy use among genders (Stoffer, 1995). In the present investigation, gender will be taken into consideration due to the inconsistent results of the previous studies dealt with vocabulary learning strategies and gender. It is not certainty whether female or male students are most in need of vocabulary learning strategies (Chamot, 2004). Also, Gender is examined in this study due to its importance as a predictor of the success in language learning and in determining the use of vocabulary learning strategies among learners (Catalan, 2003).

2.5.7.2 Vocabulary Learning Strategies and Academic Major

Academic major is one of the factors that affect the choice of vocabulary learning strategies but it has received little attention in prior studies dealing with vocabulary learning strategies. Only few studies have examined the relationship between vocabulary learning strategies and academic major. These studies were done by Gu, 2002; Siriwan, 2007; and Bernardo and Gonzalez, 2009 (see Table 2.9 page 116).

Gu (2002) examined the relationship between the students' academic major and the use of vocabulary learning strategies among Chinese learners in the Chinese EFL context. The research instruments were written questionnaire, vocabulary size test, and general proficiency measure. The students' academic majors included were Arts and Sciences. The vocabulary learning strategy questionnaire was developed based on Gu and Johnson's (1996) taxonomy which contains eight strategies. These strategies include beliefs about Vocabulary learning, Metacognitive regulation, guessing strategies, dictionary strategies, note-taking strategies, memory strategies (rehearsal), memory strategies (encoding), and activation strategies. The results revealed that science students slightly surpassed arts students in vocabulary size. However, arts students significantly surpassed science students in general proficiency test.

Siriwan (2007) explored the relationship between the use of vocabulary strategies and the academic major field among Rajabhat University students in Thailand. The participants of this study involved 1481 undergraduate students (English major students, science oriented, and non-science oriented students). Semi-structured interviews and written questionnaires were used in order to collect the data needed for the study. The vocabulary learning strategy questionnaire was developed by the researcher based on Intaraprasert's taxonomy (2004) which comprises 31 items related to three main categories, strategies to discover the meaning of new vocabulary items, strategies to retain the knowledge of newly-learned vocabulary items, and strategies to expand the knowledge of vocabulary items. The findings showed that 28 out of 54 vocabulary learning strategies included in the strategy

questionnaire differed significantly across the types of academic major. The majority of English major students reported a greater use of 28 out of 54 VLSs than did both science-oriented and non-science-oriented students. These results disagree with Gu's (2002) research who found more use of VLSs among science students compared to Arts students.

Bernardo and Gonzalez (2009) carried out a study to investigate the vocabulary learning strategies and its relation to academic major in a comprehensive university in Philippine. The sample of this study included 205 undergraduate students from five different disciplines which include Allied Medical Science, Hospitality Management, Business Education, Computer Science and Engineering, and Liberal Arts and Education. A developed written questionnaire based on Schmitt (1997) taxonomy was used to gather the information from students. The questionnaire contained items related to five main strategies: Determination (DET), Social (SOC), Memory (MEM), Cognitive (COG), and Metacognitive (MET). The results reveal that Computer Science students used the most varied strategies; social, memory, cognitive, and metacognitive VLSs. The findings of this study contradict with the earlier studies in that Computer Science students employed more varied VLSs.

Table 2.9: Related Studies on Vocabulary Learning Strategies and Academic Major

Scholar	Year	Location	Research Instrument	Sample	Findings
Gu	2002	China	Vocabulary Learning Strategy Questionnaire (VLSQ) Vocabulary size test General proficiency measure	Chinese learners in the Chinese EFL context	Science students slightly surpassed arts students in vocabulary size Arts students significantly surpassed science students in general proficiency test
Siriwan	2007	Thailand	Semi-structured interviews Written questionnaires	1481 undergraduate students	11 out of 54 vocabulary learning strategies included in the strategy questionnaire differed significantly due to the type of academic major
Bernardo and Gonzalez	2009	Philippine	Developed written questionnaire based on Schmitt (1997) taxonomy	205 undergraduate students from five different disciplines	Computer Science students have used the most varied strategies; social, memory, cognitive, and metacognitive VLSs.

The previous studies concerned with academic major and the use of vocabulary learning strategies indicate a strong connection between students' academic major and its relation to the employment of vocabulary learning strategies. Students from different academic disciplines used different VLSs. The studies carried out to find out the relationship between academic major and the use of vocabulary learning strategies used questionnaire as a main instrument for data collection. The questionnaires used in those studies were developed based on different taxonomies.

The results of the prior studies on vocabulary learning strategies and academic major asserted the significant differences among students in the use of vocabulary learning strategies due to academic major. The results of the above mentioned studies are inconclusive, for example science students used more strategies in Gu's (2002) study while Art students employed more strategies in Siriwan's (2007) study, computer science students employed the most varied strategies in Bernardo and Gonzalez's (2009) research. However, more studies on this field are needed (Siriwan, 2007). To the researcher knowledge, no past empirical research work conducted to investigate the relationship between the use of VLSs across different types of academic majors in Jordan. Therefore, academic major will be taken into consideration in this study due to the little attention paid by the previous researchers on the relationship between the use of vocabulary learning strategies and academic major. To date, there is no research works conducted to identify the relationship between the use of vocabulary learning strategies and academic major in Jordan. This study aims to bridge the gap in this field, and to offer more insights and contributions to such relationship.

2.5.7.3 Vocabulary Learning Strategies and Previous Vocabulary Learning Strategies Instruction

Previous vocabulary learning strategies instruction is extremely important for students in order to be independent in the learning process. Vocabulary instruction enables students to learn L2 lexical items, and to retain L2 words from the context (Brown and Perry, 1991). A number of researchers (Stoffer, 1995; Siriwan, 2007)

conducted research works regarding the effects of previous VLSs instruction on the use of VLSs (see Table 2.10, page 119).

Stoffer (1995) explored the vocabulary learning strategies employed by American students. The subjects of this study were 707 students, who were enrolled in Spanish, Russian, Japanese, German, and French classes at the University of Alabama, U.S.A. Two main instruments were used in this study, Strategy Inventory for Language Learning (SILL) based on Oxford's (1990) classification and Vocabulary Learning Strategy Inventory (VLSI) developed by the researcher herself. She demonstrated that the Vocabulary Learning Strategy Inventory (VOLSI) contains 53 items clustered into nine categories as follows. Strategies involving authentic language use, strategies involving creative activities, strategies used for self-motivation, strategies used to create mental linkages, memory strategies, visual/auditory strategies, strategies involving physical action, strategies used to overcome anxiety, and strategies used to organize words. The results indicate students' use of vocabulary learning strategies was significantly related to previous language learning experience.

Siriwan (2007) explored the relationship between the use of vocabulary strategies and the academic major field among Rajabhat University students in Thailand. The subjects of this study involved 1481 undergraduate students. Semi-structured interviews and written questionnaires were used in order to collect the data needed for the study. The vocabulary learning strategy questionnaire was developed by the researcher based on Intaraprasert's taxonomy (2004) which comprises 31 items related to three main categories, strategies to discover the meaning of new

vocabulary items, strategies to retain the knowledge of newly-learned vocabulary items, and strategies to expand the knowledge of vocabulary items. The findings showed that ‘more’ experienced students employed vocabulary learning strategies than ‘less’ experienced students. The results of the above two studies agreed in that “more language learning experienced students” employ vocabulary strategies more than “less language learning experienced students.

Table 2.10: Related Studies on Vocabulary Learning Strategies and Previous Vocabulary Learning Strategies Instruction

Scholar	Year	Location	Research Instrument	Sample	Findings
Stoffer	1995	USA	Vocabulary Learning Strategy Inventory (VLSI) Inventory for Language Learning (SILL)	707 students at Alabama University	students’ use of vocabulary learning strategies was significantly related to previous language learning experience
Siriwan	2007	Thailand	Semi-structured interviews Written questionnaire	1481 undergraduate students	‘More’ experienced students employed vocabulary learning strategies more than ‘less’ experienced students

2.5.7.4 Vocabulary Learning Strategies and Language Proficiency

Over the past three decades, quantitative and qualitative studies have been carried out to investigate the relationship between vocabulary learning strategies use and language proficiency. Language proficiency is stated to be one of the most important measurements of success in vocabulary learning (Wharton, 2000; Yang, 2010). A number of studies (Gu and Johnson, 1996; Siriwan, 2007; Nemati, 2008) have been

conducted in order to identify the relationship between VLSs use and language proficiency (see Table 2.11, page 123).

Gu and Johnson (1996) investigates the relationship between vocabulary learning strategies, vocabulary size, and language proficiency among Chinese learners. The participants of this study involved 850 non-English major Chinese students at the University of Beijing. The researchers administered written questionnaires and general proficiency test to gather the information of this study. They identified self-initiation and selective attention, contextual guessing, skillful use of dictionaries, note taking, paying attention to word formation, contextual encoding, and activation of newly learned words as positively correlate with the test scores, while visual repetition of new words was found to be the strongest negative predictor of both vocabulary size and general proficiency. The findings reported that high proficiency students used metacognitive strategies more than did low proficiency students.

Siriwan (2007) explored the relationship between the use of vocabulary strategies and the language proficiency among Rajabhat University students in Thailand. The subjects of this study involved 1481 undergraduate students. Semi-structured interviews and written questionnaires were used in order to collect the data needed for the study. The vocabulary learning strategy questionnaire was developed by the researcher based on Intaraprasert's taxonomy (2004) which comprises 31 items related to three main categories, strategies to discover the meaning of new vocabulary items, strategies on retain the knowledge of newly-learned vocabulary items, and strategies to expand the knowledge of vocabulary items. The findings

reported that high-vocabulary proficiency level used more frequent strategies more than those with medium and low vocabulary proficiency levels.

Nemati (2008) explored the vocabulary proficiency and its relation with the type of vocabulary learning strategies among ESL, pre-university learners in India. The number of participants who involved in this study was 60 pre-university students from different L1 background such as Kannada, Hindi, and Urdu from a Muslim co-educational school in Mysore. Nemati used two methods to collect the data of this study; this included a standard proficiency test by (Nelson 2001 series 4000 B) to classify the students into high and low proficiency students, and written questionnaire based on Schmitt's taxonomy (1997) of vocabulary learning strategy to identify the strategies used by those learners. The findings revealed that high proficiency students used vocabulary learning strategies more than low proficiency students.

Tilfarlıoğlu and Bozgeyik (2012) conducted a study to explore the vocabulary learning strategies employed by Turkish university students and its relation to language proficiency. The participants were 252 students from different proficiency groups (Beginner, Pre-Intermediate, Intermediate- and Upper-Intermediate) at Gaziantep University/Turkey. A vocabulary proficiency test and vocabulary learning strategies questionnaire were used to collect the data for this study. The data were descriptively analyzed using SPSS program. The results revealed that the use of VLSs is positively correlated to language proficiency; upper-intermediate students used wider range of VLSs than their counterparts from other proficiency levels.

Asgari and Mustapha (2012) examine the vocabulary learning strategies employed by eight Malaysian ESL students majoring in Teaching English as a Second Language (TESL) at Universiti Putra Malaysia (UPM). The researchers used semi-structured interviews to collect the data of their study. The results reveal that determination and metacognitive strategies were the most popular strategies to employ among those students.

Table 2.11: Related Studies on Vocabulary Learning Strategies and Language Proficiency

Scholar	Year	Location	Research Instrument	Sample	Findings
Gu and Johnson	1996	China	Vocabulary test Written questionnaire	850 non-English major Chinese students at the University of Beijing	High proficiency students used VLSs more frequently than low proficiency students
Siriwan	2007	Thailand	Semi-structured Interviews Written questionnaire	1481 undergraduate Students	High proficiency students used VLSs more frequently than low proficiency students
Nemati	2008	India	Standard proficiency test by (Nelson series 4000 B) Written Questionnaire	60 pre-university students from different L1 Background	High proficiency students used VLSs more frequently than low proficiency students
Tilfarhoglu and Bozgeyik	2012	Turkey	Vocabulary test Written Questionnaire	252 students from different proficiency groups	Upper intermediate students used wider range of VLSs than
Asgari and Mustapha	2012	Malaysia	Semi-structured interviews	Eight students majoring (TESL) at UPM	High proficiency students used VLSs more frequently than low proficiency students

Research works in the field of vocabulary learning strategies and language proficiency have adopted various instruments to investigate this relationship such as questionnaire (Gu and Johnson, 1996; Siriwan, 2007; Nemati, 2008), and semi-structured interview (Siriwan, 2007). These studies have employed different

instruments to measure vocabulary learning strategies use and language proficiency such as self-initiated test (Gu and Johnson, 1996), English placement test (Siriwan, 2007), and Nelson's (2001) standard proficiency test (Nemati, 2008). In this study, the language proficiency of JUST students will be measured according to students' results in the English language placement test held annually at Jordan University of Science and Technology (JUST).

The results of the previous studies on vocabulary learning strategies and proficiency level affirmed the significant differences among students in the use of vocabulary learning strategies due to the proficiency level. In addition, the results of the above mentioned studies agreed in that 'high proficiency level students use more VLSs than less proficiency level students'. However, the past studies focused on the measurement of the use of vocabulary learning strategies on vocabulary size test performance, general vocabulary learning proficiency tests, or students' self-ratings. In the present investigation, language proficiency will be examined as a predictor related to the students' use of different types of vocabulary learning strategies.

McDonough (1999) stated, "The relationship between strategy use and proficiency is very complicated; Issues such as frequency and quality of strategy use do not bear a simple linear relationship to achievement in a second language" (p. 13). To the researcher knowledge, there are no empirical studies conducted in Jordan to investigate this relationship. So, this study aims to bridge the gap in this area and to give a better understanding, and offer more contributions and insights to this issue in the field of vocabulary learning strategies. On the other hand, Yang (2010) claims that language learning strategies are closely related to proficiency due to the success

of strategy instruction or training. This leads us to review some of the research works conducted to investigate the relationship between the use of VLSs and VLSs instruction/training.

2.5.8 Vocabulary Learning Strategies Instruction

The use of vocabulary learning strategies enables learners to take control of learning away from the teacher and allows them to concentrate on other things (Nation, 2001). Past research works on vocabulary learning show that learners differ significantly in the skill with which they use strategies. Consequently, it is necessary to teach or train learners in strategy use as a part of vocabulary development program (Nation, 2001).

A number of studies have been carried out to investigate the effects of training on the use of vocabulary learning strategies (see Table 2.12, page 128). Cohen and Aphek (1981) carried out a study to investigate the role of mnemonic association on the learning of second language vocabulary. The participants were 26 adult, English-speaking learners learning Hebrew as a second language. The learners in this study have been trained to remember second language vocabulary through mnemonic association for one month. The researchers used pre-test and post-test to examine the learners' use of vocabulary learning strategies. The findings reveal that the students were relatively successful in recalling second-language vocabulary learned through these associations after the training period.

Brown and Perry (1991) conducted a study to investigate the effects of three learning strategies training on vocabulary learning among a group of Arab learners. The

learning strategies investigated included keyword, semantic, and keyword-semantic. The subjects of this study contained 60 Arab students learning English as a foreign language. The students have been trained for two days. They spent the first day of training on how to use each method and they spent the second day on instruction and testing. The results show that 'keyword' method helped low proficiency level students in vocabulary acquisition. Also, the findings reveal that the combined keyword and semantic method was significantly superior to the other two methods.

In addition, Ronald (2001) probed into the effectiveness of using Monolingual Dictionary (MLD) on 78 Japanese students whose English was rated as intermediate level. The subjects were divided into 'the dictionary definition group' and the 'example sentences group'. The students in the first group were given a set of definitions drawn from the MLD for the target words; the other group received a set of typical corpus drawn example sentences. The subjects were instructed to study the materials and asked to write the Japanese equivalent to the English definitions. After two weeks they were given a word retention test. The main results indicate that the 'example sentence group' performed worse than the 'dictionary definitions group' in the test requiring them to give translation equivalents for the target words.

Sagarra and Alba (2006) conducted a study to investigate the effectiveness of training in the use of three vocabulary learning strategies which include rote memorization, the keyword method, and semantic mapping. The subjects of this study consisted of 778 third semester L2 learners of Spanish at a large U.S. university. The researchers used a pre-test to assess previous knowledge of the target words and a post-test to evaluate the students' ability to use vocabulary learning

strategies after receiving three weeks of training to use such strategies. The findings of this study reveal that vocabulary learning strategies need deeper processing through form and meaning associations such as keyword method which yield the best retention. Also, the findings show that rote memorization of L1-L2 equivalents is more effective than creating multiple meaning associations such as semantic mapping.

Table 2.12: Related Studies on Vocabulary Learning Strategies Instruction

Scholar	Year	Research Instrument/s	Sample	Strategies Investigate	Findings
Cohen and Apeh	1981	Pre-Test Post-Test	26 adult, English-speaking learners learning Hebrew as a second language	Mnemonic association	The students were relatively successful in recalling second-language vocabulary after the training period 'Keyword' method helped low proficiency level students in vocabulary acquisition.
Brown and Perry	1991	Tests (pre/post-test)	60 Arab students learning English as a foreign language.	Keyword Semantic Keyword semantic	Combined keyword and semantic method was significantly superior to the other two methods.
Ronald	2001	Set of definitions drawn from the MLD for the target words. A set of typical corpus drawn example sentences.	78 Japanese students whose English was rated as intermediate level.	Monolingual Dictionary	The Example sentence group performed worse than the Dictionary Definitions group
Sagarra and Alba	2006	Pre-Test Post-Test	778 third semester L2 learners of Spanish at a large U.S. university.	Rote memorization Keyword Semantic mapping	Rote memorization of L1-L2 equivalents is more effective than creating multiple meaning associations such as semantic mapping.

The previous studies which focused on the effects of instruction/training in the use of vocabulary learning strategies obtained similar results. Most of the studies reveal that instruction has positive effects on the acquisition of vocabulary and in the use of vocabulary learning strategies. The prior studies have employed tests (pre-test and post-test) in order to evaluate the performance of students before and after the instruction period. The strategies that have been examined in the prior studies were different such as 'keyword', 'semantic mapping', and 'mnemonic associations'. However, very few studies have been conducted to investigate the effects of instruction in using metacognitive strategies which consists of planning, monitoring, and evaluating the process of learning vocabulary.

The field of language teaching has become more learner-focused and interactive. Thus, there has been more emphasis on helping students assume more responsibility in their language study. A consensus has been reached that learning will be facilitated and students will become more autonomous if students are explicitly taught to become more aware of and proficient in the use of vocabulary learning strategies. Metacognitive strategies, which have an executive function by means of planning, monitoring and evaluating the whole learning process, are essentially important (Fan, 2003; Zhao, 2009).

Consequently, the present research is important in three ways: 1) it bridges the gap, offering insights in the field of metacognitive strategies instruction and vocabulary learning of university students, 2) it is important to cultivate the field of research on VLSs instruction and vocabulary learning by university students in Jordan, 3) To date, there are no experimental research works conducted in Jordan to investigate the

relationship between VLSs instruction and vocabulary learning at any level of study whether university level or school level students. After reviewing some of the issues which are relevant to the field of vocabulary learning strategies, the next section reviews the instruments used in the past research works on VLSs in order to get insights on the suitable instruments which could be used in the present research.

2.5.9 Research Methods Used in Vocabulary Research

Research methods can be defined as procedures or technique a researcher follows in to achieve the goal of a study and evaluation of existing knowledge for the purpose of arriving at, and validating new knowledge (Sekaran, 2003). Cohen and Scott (1996) point out that there is no successful research works if there is no well-established research method. Robson (1993) states that there are various methods which a researcher can use in order to identify the strategies which students employ to success in their language learning. Each method has advantages and disadvantages and the method used must take into consideration the main objectives of the research (Robson, 1993).

Previous scholars have developed different methods for data collection on language learning strategies in general and VLS in particular. Cohen (1998, p. 24) states that the selection of these methods is made based on the following factors:

- 1) The objective of the study as expressed through the specific research questions;
- 2) The language modalities involved: the receptive ones of listening and reading, and the productive ones of speaking and writing;

- 3) The language learning environment;
- 4) Concerns about the reliability and validity of the given instruments;
- 5) Time constraints;
- 6) Budgetary consideration.

In this section, five methods used by previous researchers to explore the process of VLSs use will be discussed. These approaches include: oral interview, Diary studies, Think aloud, observation, and questionnaire. Each of the data collection methods previously mentioned has its advantages and disadvantages. However, this research attempts to minimize the disadvantages of its own. In order to increase the validity of the results obtained, the instrument employed for the data collection in this research will be based on triangulation. Cohen and Manion (1994) define triangulation as the employment of two or more means of data collection concentrated on the same target variables. Therefore, semi-structured interviews, questionnaire, and pre-test/post-test will be used as instruments for data collection needed in this research.

2.5.9.1 Oral Interview

Interview involves a direct conversation between researchers and individuals in order to collect data (Richards, Platt, and Platt, 1992). Oral interview is one of the primary techniques for data collection in qualitative research. It is one of the most effective methods in order for researchers to understand others (Punch, 2005). The most common types of interviews are face-to-face individual interviews, face-to-face group interviews, telephone surveys, and self-administered questionnaires (Fontana and Frey, 1994). In addition, oral interviews can be fully structured, semi-structured, or unstructured (Robson, 2002). The structured interview is based on predetermined

schedule designed to avoid the possible bias which might be caused by researcher or interviewee. The unstructured interview is categorized by a great deal of spontaneity and flexibility from both the interviewer and interviewee. The semi-structured interview lies between these two in its degree of systematic and flexibility (Nunan, 1992).

Generally speaking, student interviews provide personalized data on vocabulary learning strategies which could not be accessed through other methods (Oxford and Burry-Stock, 1995). Nunan (1989) points out that interviews can be employed to investigate learning-style preference and developmental aspects of language learning. Moreover, semi-structured interviews are commonly used among researchers due to its flexibility and it allows the researcher to get data about subjects' personal information, beliefs, opinions, attitudes, and behaviors (Merriam, 1998). In this study, the semi-structured interview will be conducted using a schedule of questions similar to questionnaire in order to provide additional information regarding the VLSs use among students.

2.5.9.2Diary Studies

Diary studies is defined as “a first-person account of a language learning or teaching experience, documented through regular, candid entries in a personal journal and then analyzed for recurring patterns or salient events” (Bailey 1990, p. 215). The researcher records information about the communicative setting involved and examples of the learner's linguistic production in details through employing diary studies (Richards et al, 1992). Diary study is used as an alternative method of data collection and it is used to monitor the teaching process or the learning process or

both (Richards et al, 1992). Further, Nunan (1989) claims that diary studies can provide insights and information into language learning which cannot be obtained by other methods. In the current investigation, diary study is not going to be employed due to two main reasons. First, the cooperation of the participants and their commitment to the task of recording the details might be the main disadvantage of this instrument. Second, most of the learners are not familiar with keeping a diary and the typical small number of participants in diary studies could restrict the data gathered (Bailey, 1990; Nunan, 1992).

2.5.9.3 Think Aloud

Richards et al (1992) indicates that think aloud method is employed to investigate learners' strategies in which they think aloud while doing a task. By employing this method, the investigator can discover the kinds of thinking strategies the students employ (Richards et al, 1992). Think aloud method is used to model the cognitive processes of reading comprehension. Students verbalize their own thoughts as they read aloud, modeling the types of strategies used by skilled readers (Bell, 1999). Oxford and Burry–Stock (1995) point out that think aloud protocols provide the most detailed information since the student describes strategies they employ while doing a language task. However, this method provides a researcher with individual information rather than group responses, it is very-time consuming, and also too difficult to employ this instrument in the current study. Consequently, the present investigation will not employ think aloud method due to the limitations it has.

2.5.9.4 Classroom Observation

Richards et al (1992) indicate that observational methods are specific techniques and procedures which are based on systematic observation of incidents. Observation is one of the most efficient methods for collecting data especially with research works concerned with culture, feelings, or subjects' ways of life (Richards et al, 1992). Classroom observation is a good technique to collect from participants since the researcher is able to directly collect data that deals with several factors of specific situations (Robson, 2002). However, Cohen and Apehek (1981) point out that classroom observation is not productive and practical method to provide much information about learning strategies that learners use. Also, it can only look for external signs of what is happening and thus may require high degrees of interpretation by the observer (Cohen. 1987). Therefore, classroom observation will not be used in this research due to the disadvantages mentioned earlier.

2.5.9.5 Questionnaire

Questionnaires can be defined as ““a set of questions on a topic or group of topics designed to be answered by a respondent” (Richards et al. 1992, p. 303). Likewise, Brown (2001, p. 6) defined questionnaires as ““any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers.” Written questionnaire is one of the most effective methods used for data collection in research works due to many reasons. Written questionnaires are used to extract answers to a set of questions and the researcher is required to format multiple answers based on research questions and research procedures (Cohen and Scott,

1996). Furthermore, Creswell (2003) points out that using a written questionnaire as a technique for collecting data has the following advantages:

- i. It is relatively quick to collect data using questionnaire because it is familiar to most people and roughly everyone has had some experience in completing questionnaires.
- ii. By using questionnaires, it is possible to collect data from a large number of people.
- iii. Employing questionnaires overcomes time consumption by getting a large amount of information in a relatively short time.
- iv. Questionnaires are considered as low-cost method compared to other methods such as face-to-face-interview.
- v. Questionnaire reduces bias since it gathers information in a standardized way, so questionnaires are more objective than other methods.

Based on the advantages of questionnaire mentioned above, questionnaire will be employed in this research because it can give useful insights about VLSs used by L2 learners when learning vocabulary. It may also lead us to more valid and reliable results.

2.6 Summary

This chapter has explained some of the important aspects of language learning generally and vocabulary learning, vocabulary learning strategies, and the prior studies of vocabulary learning strategies. It can be noticed through the extensive review of literature that many researchers have classified the vocabulary learning

strategies system in various ways. Further, the studies dealt with vocabulary learning strategies have been conducted variously in terms of objectives of the study, target sample, different factors or variables and methods of gathering information.

Concerning the objectives of the previous studies dealing with vocabulary learning strategies, it can be seen that the main purpose of most prior studies were to explore or investigate the type of vocabulary learning strategies used among learners regardless their level of study. In respect of the participants of previous studies, the subjects have been categorized into groups (native speakers, and non-native speakers). Also, they have been classified based on their level of study such as primary, lower, medium, higher, and tertiary level students, but most of the participants of past works were tertiary level students studying at colleges or universities.

Regarding the variables or factors used in the past researches, several of significant variables were tested in order to investigate the relationship between those factors and the choice of vocabulary learning strategies such as gender, academic major, previous language learning experience, and language proficiency. The present will consider the aforementioned variables due to the inconsistent results for the prior studies.

In terms of the methods used to gather data, it can be noticed that most of the researches have used vocabulary strategy questionnaire as a main instrument in their studies. Other scholars have made use of classroom observation, semi-structured interview, and think-aloud methods to collect the data necessary for their studies.

The current study will use a questionnaire based on Schmitt's taxonomy (1997) of vocabulary learning strategies and employ tests (pre-test and post-test) in order to explore the effects of metacognitive strategies training among Jordanian students.

The previous studies examined the effects of training in the use of certain strategies such as 'keyword', 'semantic mapping', and 'mnemonic associations'. However, very few studies have been conducted among EFL learners to investigate the effects of metacognitive instruction which consists of planning, monitoring, and evaluating the process of learning vocabulary on the use of vocabulary learning strategies. Consequently, this study tends to investigate the effects of metacognitive strategies instruction on the overall use of vocabulary learning strategies in the EFL context in order to give answers to the effects of teaching such strategies on the students' vocabulary learning. For this purpose, the following chapter presents the research approaches and research design which will be used in the current research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the general framework of the present investigation with some general elements of the research design which were applied to the current research. The chapter begins with the sampling and rationales of selecting participants and institution, particularities of the research respondents, and the data collection techniques. The chapter ends with describing the data analysis techniques, and the way of interpreting and reporting the data as well. As mentioned in chapter one, the main purpose of this research is twofold. Firstly, to investigate the vocabulary learning strategies employed by JUST students and secondly to examine the influence of metacognitive strategies instruction on the use of vocabulary learning strategies among L2 learners. The research questions of this study are the following:

- 1) What types of vocabulary learning strategies do JUST students use?
- 2) What is the level of using vocabulary learning strategies among JUST students?
- 3) Do the vocabulary learning strategies used by JUST students vary across gender, proficiency level, academic major and previous vocabulary learning strategies instruction?
- 4) Does the teaching of metacognitive strategies influence the learning of vocabulary among JUST students?

3.2 Research Design

The research design is important in conducting any research as it is considered as the systematic plans of what data to collect, from whom, when and how to gather the data, and how to analyze the data gathered. Also, the research questions and objectives determine the design of any research (Cohen and Manion, 2002). After reviewing the objectives of prior research works, it is obvious that the current research comes under mixed methods research in attempting to investigate the types of vocabulary learning strategies and the individual factors affecting the use of such strategies among students who learn English at JUST.

In addition, this research deals with the experimental design as it aims to examine the influence of metacognitive strategies instruction on the use of VLSs. Therefore, this study is based on triangulation which means employing two or more instruments for data collection focusing on the same target variables (Cohen and Manion, 1994). Two instruments were used to investigate the vocabulary learning strategies used by JUST students; these instruments include questionnaire, semi-structured interview. In order to examine the influence of metacognitive strategies instruction on vocabulary learning, vocabulary tests (pre/post-test) were used in order to achieve the purpose of the experiment.

3.3 Respondents of the Study

Howitt and Cramer (2000, p. 93) define the ‘respondents’ whom researchers actually examine as “a subset of a population selected from the full set or the entirety of population in accordance with the research design”. Miles and Huberman (1994) point out that no study whether qualitative, quantitative or both can include everything: ‘you cannot study everyone everywhere doing everything’ (Miles and Huberman, 1994, p. 27). Moreover, Bell (1999) confirms that the sampling techniques should be as far as possible, representative of the overall population.

Kane (1983) and Dornyei (2003) indicate that a good sample should be very similar to the target population in most of its general particularities such as gender, age, educational background, ethnicity, social class, academic capability, and socio-economic status. The selection of the sample in survey research depends on the objectives of the study and the nature of the population under investigation (Cohen and Manion, 1994).

Therefore, Jordanian students who were studying at JUST were chosen to be the respondents of the present investigation. The students belong to three faculties namely Medicine, Engineering, and Agriculture (see Table 3.1). The researcher included these three faculties as an attempt to get different students' characteristics, and totally different disciplines. The researcher has taken into consideration that the sample should not be too big to be manageable (Robson, 1993). That means that the research respondents should be representative of students studying at JUST. However, Dornyei (2003) states that “in most L2 survey research; it is unrealistic or simply not feasible to aim for perfect representativeness in the psychometric sense”.

Table 3.1: Population's Background Details Summary

Faculty	Gender		Total
	Male	Female	
Medicine	301	132	433
Engineering	867	357	1224
Agriculture	468	157	646
Total			2282

The present investigation was conducted at JUST in Irbid-Jordan. Through informal correspondences with the heads of Medicine, Engineering, and Agriculture departments, I was informed that the number of Medicine students is 433 (male=301, female=132), Agriculture students =625 (male=468, female=157), and Engineering students= 1224 (male=867, female=357) respectively. All the participants were non-native speakers of English. The English language placement test as a part of the university entrance exam was taken into consideration as an indication of the students' proficiency in English. The students' age ranges from 18 to 22 for Agriculture Students, 18 to23 for engineering students, and from 18 to 24 for Medicine students. Most of the participants began their study of the English language at the fifth grade and had studied English for seven years.

3.4 Research Instruments of the Study

The most commonly employed methods to investigate vocabulary learning strategies in the prior studies were oral interviews, classroom observation, diaries, think aloud tasks, and written questionnaires. Think aloud tasks, diaries, and oral interviews

were found to be more appropriate for a small number of participants, which would “restrict the ability of researchers to generalize the findings to larger population” (Cohen, 1998, p. 42). On the other hand, classroom observation was found to be a “not very productive method due to its revealing nothing about mental operations” (Ellis, 1994, p. 533). However, employing more than one instrument for collecting data in a research work would be beneficial, and it would strengthen the results obtained from the participants (Robson, 1993).

Therefore, this study is based on triangulation, questionnaire adapted from Schmitt's (1997) taxonomy of VLSs, and semi-structured interview adapted from Siriwan (2007) were employed to investigate the VLSs use among JUST students. Also, vocabulary tests (pre/post-tests) based on Nation's (1990) vocabulary size test were used to examine the influence of teaching metacognitive strategies on the overall use of vocabulary learning strategies.

3.5 The Pilot Study

Both vocabulary learning strategies questionnaire and semi-structured interviews were first piloted with some of the students at JUST. This section demonstrates the objectives and procedures of the pilot study for both instruments.

3.5.1 Objectives of the Pilot Study

A pilot study can be defined as a small experimental study designed to collect data prior to a larger study. This gives the researcher the opportunity to test logistics in order to improve the efficiency and quality of the research (Lancaster, Dodd, and Williamson, 2004; Peng, 2009). In this study, it was decided to implement a

preliminary version of the data collection before conducting the main study. Conducting the pilot version in this study would provide opportunities for the researcher to gather data needed for the main study, reveal the deficiencies in the design of the proposed instrument, and help the researcher to identify any weak points of the proposed methodology. The pilot study is also provides the opportunity for the researcher to check the clarity of the questionnaire items used in the present study, and check the validity and reliability of the instrument.

3.5.2 Respondents of the Pilot Study

Thirty students from Jordan University of Science and Technology participated in the pilot of questionnaire (see Table 3.2). The respondents were randomly selected on the basis of availability and convenience.

Table 3.2: Background of the Respondents Participated in Piloting the Questionnaire

Faculty	Gender		Total
	Male	Female	
Medicine	5	5	10
Engineering	5	5	10
Agriculture	5	5	10
Total			30

Table 3.2 shows the background of the respondents who participated in piloting the questionnaire. The respondents in the pilot study were 30 undergraduate students from three faculties (i.e. Medicine, Engineering, and Agriculture) who were studying

at JUST. The distribution of male and female respondents was 15 male students and 15 female students. The students' age ranges from 18 to 24, and they belong to different faculties: 10 students were from the Faculty of Medicine, 10 were from the Faculty of Engineering, and 10 were from the Faculty of Agriculture. Their English proficiency level was measured according to the ELPT conducted by the university at the beginning of each academic year. Students who scored 50 and above were considered as high proficiency students and students who scored 50 and below were considered as low proficiency students. They were all non-native speakers of English. The following table shows the background of the respondents who participated in piloting the interview questions.

Table 3.3: Background of the Respondents Participated in Piloting the Interview Questions

Faculty	Gender		Total
	Male	Female	
Medicine	1	0	1
Engineering	1	1	2
Agriculture	1	1	2
Total			5

Table 3.3 shows the background of the respondents who participated in piloting the interview questions. The respondents of the interview were five undergraduate students from three faculties (i.e. Medicine, Engineering, and Agriculture) who were studying at JUST. There were three male students and two female students. The students' age ranges from 18 to 24, and they belong to different faculties: one student

was from the Faculty of Medicine, two were from the Faculty of Engineering, and two from the Faculty of Agriculture. Their English proficiency level was measured according to the ELPT conducted by the university at the beginning of each academic year. Students who scored 50 and above were considered as high proficiency students and students who scored 50 and below were considered as low proficiency students. They were all non-native speakers of English.

3.5.3 Research Instruments of the Pilot Study

The main instrument used in the pilot study was a questionnaire adapted from Schmitt's (1997) taxonomy of VLSs. Schmitt's taxonomy was chosen as the main instrument for the present investigation due to many reasons. These reasons include the ability to be standardized as a test, the ease of use in order to get information from students, based on language learning strategies theories; it can be used with all students regardless to their educational background and target languages, technologically simple, its richness and flexibility to the various kinds of learning strategies, and can be compared to other studies (Catalan 2003). In addition, Schmitt's taxonomy has been adopted to investigate the learners' vocabulary learning strategies by many researchers (Catalan, 2003; Nemati, 2008; Bernardo and Gonzalez, 2009).

The main purposes of employing the questionnaire is to elicit the VLSs used by Jordanian students at JUST, to identify the most and least frequent VLSs used by the students, and to examine the differences in using VLSs in relation to four independent variables (i.e. gender, language proficiency, academic major, and previous VLSs instruction). The questionnaire was used to elicit the VLSs employed

by the students when they encounter new words. There were six sections in the questionnaire which are presented in Table 3.4 (see Appendix A for more details).

Table 3.4: Details of the Questionnaire

Section	Description
A	Background information: matric number, academic Major, age, gender, ELPT result, length of studying English and previous VLSs instruction.
B	Includes nine items about the use of determination strategies.
C	Includes eight items about the use of social strategies.
D	Include 28 items about the use of memory strategies.
E	Include nine items about the use of cognitive strategies.
F	Include five items about the use of metacognitive strategies.

The researcher decided to use vocabulary learning strategies questionnaire for the following reasons:

- 1) Previous key comprehensive studies on the use of vocabulary learning strategies by L2 learners used survey questionnaires in their studies (e.g. Ahmed, 1989; Oxford and Nyikos, 1989; Stoffer, 1995; Schmitt, 1997; Kudo, 1999; Segler, 2001).
- 2) A questionnaire is helpful to elicit information from a large number of participants (Oxford, 1996; Cohen, 1998).
- 3) It allows generating and testing hypotheses because of the large number of participants (Cohen, 1998).
- 4) It is easy to administer in a relatively short time (Oxford, 1996).

5) The results can be analyzed in a relatively short time (Brown, 1988).

On the other hand, semi-structured interviews were used to draw out additional information on vocabulary learning strategies used by JUST students, and to elicit other vocabulary learning strategies preferred by students other than mentioned in the questionnaire. This would offer more insights, gives a better understanding to VLSs use by JUST students which leads to a stronger and more comprehensive results. In addition, using interviews could be beneficial to explore the past, understand the present, and predict the future. It provides an understanding of interpersonal, social, and cultural aspects of the subjects being studied (Merriam, 1998; Denscombe, 2003). The interview questions consisted of 15 questions (see Appendix C). Question number one intended to create trust and build a good relationship between the interviewer and the interviewees. The rest of the questions intended to elicit the vocabulary learning strategies employed by the students both inside and outside the language classroom. The interview questions were fully adopted from Siriwan (2007). The researcher decided to adopt those questions due to its suitability and comprehensiveness.

3.5.4 Research Procedures of the Pilot Study

The data collection for the pilot study was conducted at JUST during summer 2011 (May 16). The treatment of the pilot study lasted for about one week. The students have received a brief instruction in Arabic on how to answer the questionnaire items. Next, the researcher administered 30 questionnaires to 30 students from the three faculties: Medicine, Engineering, and Agriculture who voluntarily participated to fill up the questionnaires. Back-to-back translation was conducted for the questionnaire

for validity and reliability purposes. The purpose of translation was to make it easy in terms of administration, and obtain substantial and to get more accurate results especially with low language proficiency students. The translation was done by the researcher himself and will, then, be checked by professional Arabic teachers to avoid any ambiguity in the wording of the questionnaire which could lead to problems of interpretation on the parts of the respondents and to ensure content validity. From piloting of the questionnaire, the researcher realized that it took them 15 to 20 minutes to complete the questionnaire.

In piloting the interview questions, the researcher visited the students at the university campus. The students have been met in the library of the university based on appointments on their preference. The interviews were conducted in Arabic (L1) and then tape-recorded. The duration of the interviews was fifteen minutes for each informant. At the beginning of the each interview, there was a brief conversation in Arabic in order to create a relaxed atmosphere with students. The students were free to choose the language of the interview (Arabic or English) taking into account that the wording of the questions was clear and simple.

3.5.5 Findings of the Pilot Study

The results obtained from the questionnaire had a significant contribution in identifying VLSs used by JUST. A total of fifty-nine VLSs were determined across the questionnaires. The results of this pilot study indicated that Jordanian students are aware of various VLSs. The results were obtained using descriptive statistics, independent sample t-test, and analysis of variance ANOVA to find the overall

patterns VLSs used by the students and to examine the differences in using VLSs in relation to the four variables (see Appendix F).

The interview results indicated that Jordanian students are aware of the various vocabulary learning strategies, even though most of the students mentioned that they have not received explicit instruction or training to use strategies. Also, the results revealed that determination and social strategies were the most frequent strategies employed by the students. Metacognitive strategies were found to be the least frequent strategies to be used by the students.

3.5.6 Review of the Pilot Study

As mentioned earlier, the pilot study gives opportunities to try various data collection methods prior to the data collection of the main study. These procedures are used to avoid ambiguity of the methods used and to ensure more valid and reliable instruments. Validity refers to the extent to which the data collection procedure measures what it intends to measure (DeVellis, 1991). In piloting the questionnaire, some of the items did not really reflect the meaning of the items. The students faced difficulties in understanding some of the items. For example, the memory items "peg method" and "loci method" did not fully understood by the students as they are unfamiliar in using such strategies. Therefore, the researcher provided the definitions of those strategies in order to ensure best understanding among students.

In piloting the interviews, there were difficulties in understanding the question number 14. Apparently, the students provided irrelevant answers to this specific

question. Also, the students who chosen to be interviewed in English face difficulties in expressing their ideas and thoughts. This leads the researcher to repeat the question more than once and to provide some Arabic hints or explanations to the interviewees.

The criterion of reliability refers to the consistency of a measure. A test is considered reliable if we get the same results repeatedly (Creswell, 2003). In order to ensure the reliability, the questionnaire items were checked by the researcher and a reliability check analysis was performed as well. According to DeVellis (1991), good reliability of the questionnaire will be found if the alpha (α) is at least equal 0.70 ($\alpha \geq 0.70$). After collecting data from the questionnaires, the data were calculated using SPSS 17.0 for Windows. The reliability value was found to be 0.924 ($\alpha = 0.924$), which is much higher than 0.70. Thus, the present questionnaire was reliable and could be used in the main study (see Table 3.5).

Table 3.5: Reliability Check of the Questionnaire

Cronbach's Alpha	N of Items
.924	59

In piloting the interview, the students were free to choose the language of the interview (Arabic or English). Although the wording of the interview questions was clear and simple, the researcher decided to conduct the Arabic version of the interview. This could help to get more accurate data if the students were interviewed in a language that fully understood by them. The weakness points of the pilot study could help to strengthen the research procedures for the main study. The following

section provides explanations of the refinements made to the procedures of the main study.

3.5.7 The Refinement of the Main Study

Before proceeding to the main study, a number of actions have been taken into account to increase the validity and reliability of the research instruments. The questionnaire items have been checked in order to get and ensure complete answers of the questionnaire. In the main study, the researcher provided the definition of certain items which have been considered by the students as ambiguous and difficult to understand such as "peg method" and "loci method". In order to avoid misunderstanding and get more accurate data, the questionnaire was translated into Arabic to be fully understood by the students.

On the other hand, personal interviews were also used to complement and to validate the questionnaire results. Employing interviews in the present research would provide deeper understanding of the issue being investigated and could strengthen the results obtained from the questionnaire. The interviewees were free to choose the language of the interview (English or Arabic). However, the researcher believes that using Arabic language in the interviews helps to get more accurate and rich data. In the main study, all the interviews were conducted in Arabic language and there was no choice for the students to choose the language of the interview. Finally, the number of respondents was increased in the main study in order to get a clearer picture and more reliable data on the use of VLSs among Jordanian students at JUST.

3.6 The Research Design for the Main Study

As mentioned earlier, this study is based on triangulation which means employing two or more instruments for data collection focusing on the same target variables. Two instruments were used to investigate the vocabulary learning strategies used by JUST students; these instruments include questionnaire and semi-structured interviews. In order to examine the influence of metacognitive strategies instruction on vocabulary retention, vocabulary test (pre/post-tests) based on Nation's (1990) vocabulary proficiency test were used in order to achieve the purpose of the experiment.

3.6.1 Respondents of the Main Study

The present investigation was conducted at Jordan University of Science and Technology in Irbid-Jordan. Through informal correspondences with the heads of Medicine, English, and Engineering departments, I was informed that the number of Medicine students is 433 (male=301, female=132), Agriculture Students =625 (male=468, female=157, and Engineering students= 1224 (male=867, female=357) respectively. All the respondents were non-native speakers of English. The English language placement test as a part of the university entrance exam was taken into consideration as an indication of the students' proficiency in English. The students' age ranges from 18 to 22 for Agriculture Students, 18 to23 for engineering students, and from 18 to 24 for Medicine students. Most of the participants began their study of the English language at the fifth grade and had studied English for seven years.

Since the information available on the number of students at JUST is according to the faculties, this research employed a proportionate stratified random sampling method to select the number of students from each faculty at JUST. In determining the sample size, Sekaran (2003, p. 294) provided a table that generalized scientific guideline for sample size decision. According to the table, for a population size of 2200, the appropriate sample size is 327. The total number of students at the three faculties (Medicine, Engineering, and Agriculture) at JUST was 2282 (almost 2200), consequently the appropriate sample size of this study is also 327. However, the number of returned questionnaires was much higher than 327 and the researcher decided to include all of them in the analysis procedure (see Table 3.6).

Table 3.6: Proportionate Stratified Random Sampling

Faculty	Number of Students	Number of Selected Students
Medicine	433	205
Engineering	1224	291
Agriculture	646	242
Total	2282	738

Table 3.6 shows that the respondents of this study were 738 students from the three faculties who were randomly selected to participate in answering the vocabulary learning strategies questionnaire, Tables 3.7-3.10 describe the background of respondents according to the four variables (i.e. gender, language proficiency, academic major, and previous VLSs instruction).

Table 3.7: Background Details of the Respondents by Gender

		Frequency	Percent	Valid Percent
Valid	Male	378	51.2	51.2
	Female	360	48.8	48.8
	Total	738	100.0	100.0

Table 3.7 shows the distribution of the respondents according to their gender. The number of male students was 378 forming around 51 percent of the overall respondents. The number of female students was 360 forming around 49 percent of the total respondents.

Table 3.8: Background Details of the Respondents by Academic Major

		Frequency	Percent	Valid Percent
Valid	Medicine	205	27.8	27.8
	Engineering	291	39.4	39.4
	Agriculture	242	32.8	32.8
	Total	738	100.0	100.0

Table 3.8 shows that the number of medicine students was 205 forming around 28 percent of the overall respondents. The number of engineering students was 291 constituting around 39 percent of the total respondents, while the number of agriculture students was 242 constituting 33 percent of the respondents.

Table 3.9: Background Details of the Respondents by Language Proficiency

		Frequency	Percent	Valid Percent
Valid	High	274	37.1	37.1
	Low	464	62.9	62.9
	Total	738	100.0	100.0

Table 3.9 reveals that the number of high proficiency students was 274 forming around 37 percent of the overall respondents. The number of low proficiency students was 464 constituting around 63 percent of the total respondents.

Table 3.10: Background Details of the Respondents by Previous VLSs Instruction

		Frequency	Percent	Valid Percent
Valid	Yes	201	27.2	27.2
	No	537	72.8	72.8
	Total	738	100.0	100.0

Table 3.10 shows that the number of students who indicated previous experience in VLSs instruction was 201 forming around 27 percent of the overall respondents. The number of students who indicated no previous experience in VLSs instruction was 537 constituting around 73 percent of the total respondents.

The semi-structured interviews involved 40 students from the three faculties. The purpose of conducting personal interviews is to get additional information on VLSs use among those students (see Tables 3.11-3.14). The questions of the interview were piloted with undergraduate students who were from the target population but not participating in the present investigation, in order to ensure that all questions are clear for the interviewees. The interview questions were translated from English into Arabic to reduce the possibility of being misinterpreted by the respondents,

especially low proficiency students. Then, the interview questions have been reworded and re-arranged before the actual use of these questions.

Table 3.11: Background Details of the Interviewees by Gender

		Frequency	Percent	Valid Percent
Valid	Male	20	50.0	50.0
	Female	20	50.0	50.0

Table 3.11 illustrates that the number of male and female students was equal (20 students for each group). This constitutes 50 percent of the overall respondents.

Table 3.12: Background Details of the Interviewees by Academic Major

		Frequency	Percent	Valid Percent
Valid	Medicine	12	30.0	30.0
	Engineering	16	40.0	40.0
	Agriculture	12	30.0	30.0
	Total	40	100.0	100.0

Table 3.12 indicates that the number of medicine students was 12 forming 30 percent of the respondents. Agriculture students were also 12 forming 30 percent of the respondents. Engineering students were 16 constituting 40 percent of the total respondents.

Table 3.13: Background Details of the Interviewees by Language Proficiency

		Frequency	Percent	Valid Percent
Valid	High	15	37.5	37.5
	Low	25	62.5	62.5
	Total	40	100.0	100.0

Table 3.13 reveals that the number of high proficiency students who participated in the interviews was 15 forming 37.5 percent of the total interviewees. The number of low proficiency students was 25 constituting 62.5 percent of the overall interviewees.

Table 3.14: Background Details of the Interviewees by Previous VLSs Instruction

		Frequency	Percent	Valid Percent
Valid	Yes	10	25.0	25.0
	No	30	75.0	75.0
	Total	40	100.0	100.0

Table 3.14 shows that the number of students who indicated previous experience in VLSs instruction was 10 forming 25 percent of the interviewees. The number of students who indicated no previous experience in VLSs instruction was 30 forming 75 percent of the overall interviewees.

On the other hand, the design of quasi-experiment refers to a certain type of experiment which one has little or no control over the appointment of the treatments or other factors being studied (Levy and Ellis, 2011). The major difference in this design is the lack of random assignment and the other distinguished element in this design is the use of time series analysis (Levy and Ellis, 2011). The first part of

creating quasi-experimental design is to identify the variables. In this study, the quasi-independent variable is the teaching of metacognitive strategies, and the dependent variable is vocabulary learning. According to Levy and Ellis (2011), quasi-experimental design may have advantages and disadvantages as shown in Table 3.15.

Table 3.15: Advantages and Disadvantages of Quasi-Experimental Design

Advantages	Disadvantages
Easy to set up	The manipulation of the quasi-independent variable can lead to unnatural circumstances
It minimizes threats to external validity	The lack of random assignment in the quasi-experimental design method may allow studies to be more feasible
Findings in one way could be applied to other subjects and settings allowing for some generalizations	It is hard to rule out confounding variables and introduces new threats to internal validity.
It is efficient in longitudinal research that involves longer time periods	Due to the absence of randomization, some are difficult to determine due to a variety of confounding variables

(Source: Levy and Ellis, 2011)

The respondents of this phase of research were 60 students, 30 in the control group and 30 in the experimental group. The students were belong to the three faculties (Medicine=20, Engineering=20, and Agriculture=20) at JUST. All students were considered as low proficiency in English language due to their scores obtained in the English language placement test conducted by the university at the beginning of each academic year. There were 30 female students and 30 male students in this experiment; the age range of the participants was between 18 and 24 (see Table 3.16).

Table 3.16: Profile of the Students' Participated in the Quasi-Experimental Design

Participants	Gender	Academic Major	Language Proficiency	Age Range
Control Group (n=30)	Male (n=15) Female (n=15)	Medicine (n=10) Engineering (n=10) Agriculture (n=10)	Low (n=30) High (n=0)	18-24
Experimental (n=30)	Male (n=15) Female (n=15)	Medicine (n=10) Engineering (n=10) Agriculture (n=10)	Low (n=30) High (n=0)	18-24

Table 3.16 shows that number of students was 30 for each group. There were 10 students from each faculty involved in this study. There were 30 male students and 30 female students (15 males and 15 females in each group). All the students were considered as low proficiency students referring to their scores in the ELPT conducted by JUST at each academic year. The students' age ranges from 18 to 24 years old.

3.6.2 Research Instruments of the Main Study

As mentioned earlier, this study is based on triangulation, questionnaire and semi-structured interview were employed to investigate the VLSs use among JUST students, and tests (pre/post-tests) were used to examine the influence of teaching metacognitive strategies on the overall use of vocabulary learning strategies.

3.6.2.1 The Questionnaire

The first instrument which was used in the present investigation is VLSs questionnaire which consisted of two sections. The first section contains seven

questions which are related to the participants' personal information and English language knowledge (Matric number, academic major, age, gender, result in the English entrance exam, the period of learning English, and previous experience in VLSs instruction. All the respondents were informed about the main purpose of the research and they were asked if they are willing to cooperate and contribute to this work.

The second section was the VLSs questionnaire which aims to elicit the types and the level of using VLSs among the respondents of this study. In addition, it aims to look into whether or not the investigated factors, such as gender, academic major, language proficiency, and previous VLSs instruction, related to students' self-reported use of vocabulary learning strategies obtained through questionnaire.

The questionnaire consisted of 59 items regarding different techniques of learning vocabulary and it was listed in a table format. The instructions explain the purpose of the survey and prior to the procedure; the researchers discussed the vocabulary learning strategies with the respondents to make sure that they understood what learning strategies are. The respondents were asked to circle numbers next to each strategy. For example, to circle 1 for never or almost never used this strategy, 2 for seldom used the strategy, 3 for sometimes used this strategy, 4 for often use this strategy and 5 for always used this strategy.

Based on the pilot study which was previously conducted, back-to-back translation was conducted for validity and reliability purposes. The Arabic translation was also conducted as it would make it easy in terms of administration, and obtain substantial

and more accurate results especially with low language proficiency students (see Appendix B). The translation was done by the researcher himself and will, then, be checked by professional Arabic teachers to avoid any ambiguity in the wording of the questionnaire which could lead to problems of interpretation on the parts of the participants and to ensure content validity.

3.6.2.2 The Interview

The purpose of using semi-structured interview is to draw out additional information on vocabulary learning strategies use by JUST students, and to elicit other vocabulary learning strategies preferred by students other than mentioned in the questionnaire. This would offer more insights, gives a better understanding to VLSs use by JUST students which leads to a stronger and more comprehensive results. In addition, using interviews could be beneficial to explore the past, understand the present, and predict the future. It provides an understanding of interpersonal, social, and cultural aspects of the subjects being studied (Merriam, 1998; Denscombe, 2003).

3.6.2.3 Vocabulary Size Tests

The researcher used a pre-test which contains 50 multiple-choice items based on Nation's(1990) multiple-choice test in order to check the homogeneity of the two groups (control and experimental) in vocabulary size (see Appendix G). The same test was also used after the training period in order to measure the outcome of metacognitive strategies instruction. Several reasons led this research to employ these tests. Read (2000) point out that Nation's test has proven to be a good

diagnostic measure of vocabulary level and he assumes that VLT is almost the standard test of vocabulary. Nation (2001, p. 21) states that “the test is designed to be quick to take, easy to mark, and easy to interpret”. Moreover, it tests the English lexical proficiency of students from large samples of words from different word frequency levels, which being chosen randomly, represent the entire vocabulary at these levels (Nation, 2001).

Considering validity as one of the most important characteristics of a test, the vocabulary tests were based on Nation’s (1990) multiple-choice test to measure the vocabulary size of the students. This test has been used as an instrument to measure the students' vocabulary knowledge in several previous studies. In terms of the validity of the training instruments, CALLA has been used in different contexts successfully. It is claimed on the website of the CALLA model that it is being implemented in approximately 30 school districts in the United States as well as in several other countries (Coskun, 2010). To ensure the reliability of the tests, reliability estimates included Cronbach’s alpha was used to gain a satisfactory reliability. The value of Cronbach’s alpha for pre-test was .717 which indicates good and satisfactory reliability value (DeVellis, 1991).

3.6.3 Research Procedures of the Main Study

The procedures of the main study lasted for about four months (see Figure 3.1, page 167). For the survey purpose, a number of 1000 questionnaires were distributed to the students. The administration and collection of the questionnaires was completed by the researcher himself. The students received a brief explanation on the purpose and importance of the research. Furthermore, the researcher explained to the students

that there are no wrong or right answers to the items given. The students were informed that their responses and answers will remain confidential; this can help the students to respond as honestly and accurately as possible.

The students were also given an example on how to answer the questions in the questionnaire asking them to ask for any clarification they might face. For that purpose, the researcher was present in the class when the students completed the questionnaire in order to clarify or explain any ambiguous items in the questionnaire. The students took 15-25 minutes to fill in the questionnaire. Medicine students needed less time to complete the questionnaire than agriculture and engineering students. Agriculture students needed more time to complete the questionnaire than medicine and engineering students. Out of 1000 questionnaires distributed in the study, only 738 were considered to be valid for analysis procedures. The rest of the questionnaires were ignored due to incomplete answers or circling the same number for each item.

The interviews were conducted at times separate from the class time, the researcher asked for students' permission to interview them and to tape-record their interviews. The purpose of doing so is to avoid missing any information of the students' interviews. Upon completion of the questionnaire by the students, 40 students were selected for the interview session. The purpose of these interviews is to ask the students about the vocabulary learning strategies they employ inside and outside classrooms. As outlined in earlier, the interviews were conducted in Arabic language and consisted of 14 questions after deleting the questions number 14 as it seems difficult to the students to understand this question (see Appendix D).

Each interviewee had a copy of the questionnaire to comment on the items one by one, so it would be easy for them to remember the strategies they employ to learn new words. The researcher has also raised some interesting points based on the students' responses during the interviews. The students were also encouraged to discuss any point which is not covered in the questionnaire and to ask questions about the study or any other issue. Regarding the length of the interviews, each student took 20-25 minutes to discuss and express his/her own vocabulary learning strategies in learning new lexical items.

The strategy training was implemented over a span of 2 months and a half (i.e. week one to week 10). First, the vocabulary strategy training was given to both control and experimental groups. These sessions lasted for two weeks; each class lasted for one hour and 30 minutes (once a week). In lesson one, the teacher administered the pre-test to check the homogeneity of the two groups in vocabulary learning as mentioned earlier. In lesson two, the teacher explained the main purpose of conducting the experiment for both control and experimental group, and to present various VLSs exist for both groups as well. In lesson three, the teacher encouraged the students (control and experimental) to think about other vocabulary learning strategies they used and share the ideas together.

The second part of the training dealt with metacognitive strategies training. In this phase, only experimental group received explicit instruction on metacognitive strategies starting from the third week of the instruction process. The instruction procedure was based on CALLA model of teaching learning strategies which includes five main phases as follows:

- 1) Preparation: the purpose of this phase was to explain and discuss the meaning of metacognitive strategies to the students, to show the main components of CALLA model, and to elicit the students' prior knowledge of metacognitive strategies. In this phase, the teacher showed the importance of metacognitive strategies and he distributed handouts containing various metacognitive strategies (see Appendix G).
- 2) Presentation: this phase concerned with making appropriate plan and set specific goals for vocabulary learning. The teacher discussed his own strategies employed to unknown words through reading task. The students were also taught about the different strategies which they might use to unknown words encountered in texts, the teacher provided illustrations and examples on using such strategies (see Appendix H).
- 3) Practice: in this phase of instruction, the students have been given the opportunity to practice using various metacognitive strategies with authentic learning tasks. They were also encouraged to make conscious efforts using metacognitive strategies in combination to vocabulary learning strategies. The teacher assisted and guided the students to monitor the various metacognitive strategies available to them. At the end of this phase, the students become aware of the different metacognitive strategies use in different tasks (see Appendix I).
- 4) Evaluation: the main purpose of this phase is to provide opportunities for the students to evaluate their strategies in learning English vocabulary. Through

this phase, the teacher checked the students' development in metacognitive awareness in their vocabulary learning. The teacher used some activities to develop students' self-evaluation such as self-questioning and checklists of strategies used. In those activities, the students expressed their beliefs and opinions about the benefits of metacognitive strategies (see Appendix J).

- 5) Expansion: in this phase, the teacher encouraged the students to use strategies they found most influential in their vocabulary learning. They have also told to apply those strategies in different tasks and contexts (see Appendix K). At the end of instruction period, both control and experimental group were given the vocabulary post-test and it was compared with pre-test results to find out the effect of metacognitive strategies instruction in the students' vocabulary learning.

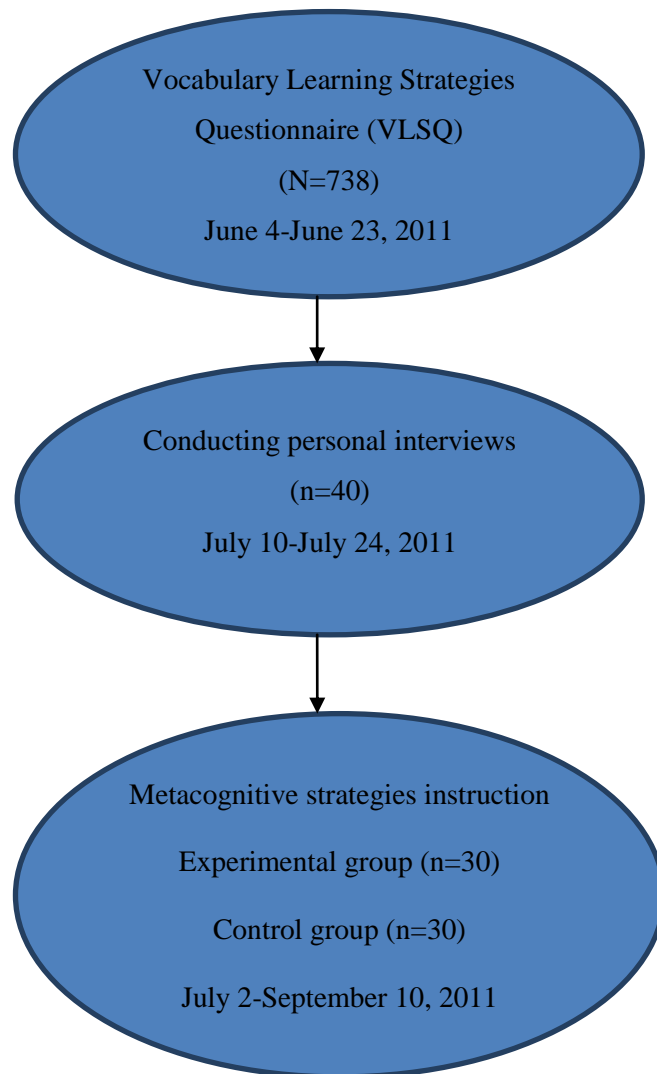


Figure 3.1: Data Collection Stages

3.6.4 Data Analysis of the Main Study

The returned questionnaire was recorded and tabulated with the assistance of Statistical Package for Social Sciences (SPSS) for windows 17.0 to identify the correlated relationships of variables concerning vocabulary learning strategies. Different statistical methods were used to achieve the main objectives of the present investigation. These methods include descriptive statistics, independent sample T-Test, and analysis of variance (ANOVA).

Descriptive statistics, including means, standard deviation and frequencies, were computed to summarize the students' answers to using strategies listing in the questionnaire; descriptive statistics and frequencies were employed to calculate the demographic data of the students with regard to gender, language proficiency, academic major, and previous vocabulary learning strategies instruction.

An independent sample T-test is a statistical method employed to demonstrate the variations among the means of two groups of a variable. In the current research, this statistical method was used in order to identify the significant differences between the students' overall vocabulary learning strategies employed concerning independent variables such as gender, language proficiency, and previous vocabulary learning strategies instruction.

An analysis of variance (ANOVA) is a method of statistical analysis used to determine differences among the means of more than groups of a variable (Howitt and Cramer, 2000). In the present study, this statistical method was used to determine the relationship between students' overall vocabulary learning strategies used with regard to the independent variable (i.e. academic major).

The interviews' data were analyzed through 'open and axial coding' techniques proposed by Punch (2005, pp. 207-211) and Strauss and Corbin (1998, pp. 61-62). 'Open coding' is "the process of breaking down, examining, comparing, conceptualizing, and categorizing data". It is "the part of analysis that pertains specifically to the naming and categorizing of phenomena through close examination of data". 'Axial coding' is "a set of procedure whereby data are put back together in

new ways after open coding paradigm involving conditions, context, action/interactional strategies and consequences” (Strauss and Corbin 1998, pp. 61-62). With ‘axial coding’, the data will be “put back together in new ways by making connections between a category (open coding) and its sub-category (axial coding) (Strauss and Corbin 1998, p. 96).

The results of both tests (pre-test/post-test) were marked by the researcher. The students’ answers have been inserted in the SPSS program regardless of being wrong or right. Then, the scores inserted by giving one mark for each correct answer and zero for the others, and the whole test was computed using SPSS. As a result, the total scores were calculated for each person, and for the test as a whole. An independent samples t-test was used to check the homogeneity between both groups (control and experimental) in vocabulary learning before the metacognitive strategies instruction. The results of post-test have been compared to the pre-test results by carrying out independent samples t-test statistical procedure.

3.7 Ethical Considerations

The ethical points are very important in conducting any research requires diligence and expertise. The ethical points are also important to protect and recognize the rights of participants. In order to render the ethical consideration, the rights to informed consent anonymity and confidentiality, and scientific honesty should be observed.

Burns and Grove (1993) define informed consent as the subjects’ agreement to participate in a study, which is reached after presenting the main objectives and the

essential information about the study. In this study, the participants' consent was obtained after completing the questionnaire. The participants were informed of their rights to participate voluntarily or decline to participate. Further, the participants were informed of the procedures of collecting data and how it is going to be used to reduce the potential risks or costs involved.

The anonymity in research is defined as inability to link with the subjects, even with the researcher, with his or her individual responses (Burns and Grove, 1993). The anonymity of this study was ensured by not disclosing the participant's name on the questionnaire. Instead of that, the participant's consent was detached with the questionnaire. On the other hand, confidentiality is defined as the information that the participants provide will not be reported to public (Polit and Hungler, 1993). In the present investigation, confidentiality was obtained by keeping the process of data collection confidential and not revealing the identities of the participants when publishing the study.

Scientific honesty is also a very important point that should be taken into consideration when conducting any research. Brink (1996) indicates that dishonesty in research includes manipulation of design and methods, and retaining or manipulation of data. In the present investigation, the researcher tried to avoid dishonesty by recording the participant's answers objectively and truthfully. In addition, the open-ended questions which were analyzed by the researcher were also checked by the supervisors for credibility confirmation.

3.8 Summary

In this chapter, a background of research methodology which includes research design, participants, data collection methods, and data analysis methods for the present investigation have been explained. This is followed by the issues of validity and reliability in this study. Finally, the ethical considerations of this investigation have been discussed and explained in the end the chapter. After illustrating the research instruments which were used in this study, the quantitative and qualitative results are presented thoroughly in the following chapter.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter aims to demonstrate, describe, and discuss the results and findings of the current research at different levels of data analysis, for example the overall use of vocabulary learning strategies (VLSs), the use of vocabulary learning strategies in the five main categories, and use of individual vocabulary learning strategies. The results will be presented based on the research questions that guide the current research. In addition, significant variations in the frequency of students' use of vocabulary learning strategies according to gender, academic major, language proficiency, and previous vocabulary learning strategies instruction are also described and discussed in this chapter.

The current research consisted of four main research questions as follows:

- 1) What types of vocabulary learning strategies do JUST students use?
- 2) What is the level of using vocabulary learning strategies among JUST students?
- 3) Do the vocabulary learning strategies used by JUST students vary across gender, proficiency level, academic major and previous vocabulary learning strategies instruction?
- 4) Does the teaching of metacognitive strategies influence the learning of vocabulary among JUST students?

4.2 Vocabulary Learning Strategy Use Reported by all Respondents

The main point of this section involves simple descriptive statistics. The descriptive statistics show the overall use of vocabulary learning strategies obtained from 738 students at JUST. The overall vocabulary learning strategies were computed in order to give answers for the research question number one: *What types of vocabulary learning strategies do JUST students use?* and research question number two: *What is the level of using vocabulary learning strategies among JUST students?*

The frequency of the students' overall use of vocabulary learning strategies has been categorized based on Oxford (1990) criteria. The frequency of strategy use is determined on a five-point likert scale, ranging from high frequency use (3.5-5.0), medium frequency use (2.5-3.49), and low frequency use (1.0-2.49)

4.2.1 Students' Overall Strategy Use

Table 4.1 below shows the results of the overall mean frequency score of vocabulary learning strategies obtained from 738 students who are studying at JUST, specifically in the three faculties: Medicine, Engineering, and Agriculture.

Table 4.1: Frequency Score of Students' Overall Use of VLSs

	N	Minimum	Maximum	Mean	Percentage	Std. Deviation	Frequency Category
Overall	738	1	5	2.90	58percent	.545	Medium Use
Valid N (listwise)	738						

As seen in Table 4.1, the mean frequency score of students' overall use of vocabulary learning strategies is (Mean=2.90, Std. Deviation=.545). These results

reveal that the respondents used vocabulary learning strategies at medium frequency level of strategy use. The next section demonstrates the frequency of using vocabulary learning strategies in the five main categories: Determination Strategies (DET), Social Strategies (SOC), Memory Strategies (MEM), Cognitive Strategies (COG), and Metacognitive Strategies (MET).

4.2.2 Students' Use of VLSs in the Five Categories

As presented earlier in the literature review chapter, Vocabulary Learning Strategies (VLSs) of the current investigation are grouped into five main categories based on Schmitt's (1997) classification of vocabulary learning strategies. These five main categories of vocabulary learning are: 1) Determination Strategies (DET), Social Strategies (SOC), Memory Strategies (MEM), Cognitive Strategies (COG), and Metacognitive Strategies (MET). Table 4.2 illustrates the mean scores of the five main categories of VLSs.

Table 4.2: Level of Using VLSs in the Five Categories

Category	N	Mean	Percentage	Standard Deviation	Rank	Frequency Category
Determination	738	3.13	62.6 percent	.617	1	Medium use
Social	738	2.97	59.4 percent	.661	2	Medium use
Memory	738	2.87	57.4 percent	.621	3	Medium use
Metacognitive	738	2.77	55.4 percent	.857	4	Medium use
Cognitive	738	2.76	55.2 percent	.774	5	Medium use

As revealed in Table 4.2, the participants used a medium level of strategy use in all categories of vocabulary learning strategies. The most preferred strategies among the five strategies were determination strategies (Mean=3.13, Std. Deviation=.617), followed by social strategies (Mean=2.97, Std. Deviation=.661), memory strategies

(Mean=2.87, Std. Deviation=.621), metacognitive strategies (Mean=2.77, Std. Deviation=.857). Cognitive strategies were the least frequent strategies among all the five categories (Mean=2.76, Std. Deviation=.774). Low or high degree of strategy use was not found in any of the five categories of vocabulary learning strategies.

4.2.3 Interview Results of Using VLSs in the Five Categories

In order to strengthen the results of the questionnaire survey, this section provides the types of vocabulary learning strategies employed by students which were reported by 40 students through semi-structured interviews (see table 4.3).

Table 4.3: Interview Results of the Overall Use of VLSs in the Five Categories

Category	No. of Respondents (Total= 40)	Percentage
Determination	40	100 percent
Social	40	100 percent
Memory	40	100 percent
Cognitive	28	70 percent
Metacognitive	27	67.5 percent

Table 4.3 shows the qualitative results of the overall use of vocabulary learning strategies as reported by the research informants. The results show that 40 out of 40 students; 100percentused determination, social, and memory strategies. The findings also reveal that 28 out of 40 students; 70percentused cognitive strategies, 27 out of 40 students; 67.5percentused metacognitive strategies. The results of the interview are consistent with the questionnaire survey in that the students used determination, social, and memory strategies more frequently than cognitive and metacognitive strategies. The next section describes the individual strategy use for each category of VLSs.

4.2.4 Individual Strategy Use for the Determination Category

Table 4.4 below demonstrates the individual vocabulary learning strategy use of the determination category. Determination category consists of nine individual strategies for vocabulary learning. These strategies based on Schmitt's (1997) taxonomy which are used to discover the meaning of new English words.

Table 4.4: The Level of Using Individual Determination Strategies

Individual Strategy	Mean	Percentage	Standard Deviation	Frequency Category
DET 5 Guess meaning from textual context	3.63	72.6percent	1.153	High use
DET 4 Analyze through available pictures or gestures	3.48	69.6percent	1.093	Medium use
DET 7 Use monolingual dictionary	3.40	68percent	1.264	Medium use
DET 3 Check for L1 cognate	3.33	66.6percent	1.133	Medium use
DET 1 I Analyze part of speech	3.17	63.4percent	1.237	Medium use
DET 2 Analyze affixes and roots	3.03	60.6percent	1.261	Medium use
DET 6 Use bilingual dictionary	2.82	56.4percent	1.245	Medium use
DET 8 Word lists	2.52	50.4percent	1.242	Medium use
DET 9 Flash cards	2.17	43.4percent	1.170	Low use

Table 4.4 above indicates the mean frequency score and standard deviations of the individual determination strategies (items one to nine). As shown above, 'guess meaning from textual context' was the only vocabulary learning strategy used by the students at high level (Mean=3.63, Std. Deviation=1.153). Contrariwise, 'flash cards' was the only vocabulary learning strategy used by the students at low level (Mean=2.17, Std. Deviation=1.170). The rest of the strategies were reported at the medium frequency level. The next section describes the interview results of the individual strategy use for the determination category.

4.2.5 Interview Results of the Individual Strategy Use for the Determination

Category

Table 4.5 below shows the interview results of the individual strategy use for the determination category. The following results have been obtained through semi-structured interviews with 40 students who are studying at Jordan University of Science and Technology. The individual strategies obtained have been compared to the individual strategies in Schmitt's (1997) taxonomy of vocabulary learning strategies.

Table 4.5: Interview Results of the Individual Strategy Use for the Determination Category

Category	Codes	No. of Students	Percentage	
Determination	Use Bilingual Dictionary (UBD)	40	100 percent	
	Guess Meaning from Context (GMFC)	28	70 percent	
	Use Monolingual Dictionary (UMD)	17	42.5 percent	
	Reading Different Materials (RDM)	16	40 percent	
	Use Online Dictionary (UOD)	14	35 percent	
	Word Lists (WL)	11	27.5 percent	
	Electronic Dictionary (ED)	10	25 percent	
	Use Online Resources (UOR)	5	12.5 percent	
	Analyze Parts of Speech (APS)	5	12.5 percent	
	Analyze Affixes and Roots (AAR)	2	5 percent	
	Analyze Through Available Pictures or Gestures (ATAPG)	2	5 percent	
	Total of Instances		150	

As illustrated in Table 4.5, the informants indicated a wide use of determination strategies. All the respondents (40 out of 40; 100percent) said that they use bilingual dictionary in order to discover the meaning of new words when they first encountered:

.....Basically, I rely on bilingual dictionary to know the meaning of new words....

(Participant 1, Agriculture)

Most of the students(28 out of 40; 70percent) pointed out that they try to guess the meaning of new words through textual context:

.....I think I can't do anything except guessing the meaning of that word from its context.....

(Participant 14, Engineering)

Some of the students (17 out of 40; 42.5percent) indicated that they use monolingual dictionary to know the meaning of unfamiliar words:

..... I check the monolingual dictionary and if I didn't manage to know the meaning, I refer to bilingual dictionary....

(Participant 32, Medicine)

Some other students (16 out of 40; 40percent) reported that they read different materials such as articles, books, or magazines to get new words meanings:

..... I'm interested in reading especially with the subjects that are related to my major.....

(Participant 2, Agriculture)

The results are also showed that some of the students (14 out of 40 students; 35percent) used online dictionaries or translators for getting familiar with new English words:

.....I read these articles carefully and try to discover the meaning of unknown words using Google translator.....

(Participant 18, Engineering)

Regarding the use of word lists strategy, (11 out of 40; 27.5percent) said that they use this strategy to discover the meaning of new words as follows:

..... I write the Arabic meaning, definition, explanation, or whatever in lists.....

(Participant 33, Medicine)

Concerning the use of electronic dictionary, (10 out of 40 students; 25percent) mentioned using this strategy to understand the meanings of unfamiliar words:

..... I use my electronic dictionary inside the classroom which is considered as monolingual and bilingual in the same time.....

(Participant 9, Agriculture)

Few students (five out of 40; 12.5percent) said that they use online resources and analyze parts of speech in order to get the meaning of new words:

.....I learn a lot of words through websites which are interested in English vocabulary.....

(Participant 19, Engineering)

..... I try to find out the category of that word and then guess its meaning from the context.....

(Participant 15, Engineering)

Very few students (two out of 40; 5percent) indicated that they get the meanings of new words by analyzing affixes and roots, and analyze the meaning through available pictures or gestures:

.....If I encounter a new word in the class, I pay attention to suffixes and prefixes and I set up a relationship with words previously learned.....

(Participant 22, Engineering)

.....It's normal in our exams to have some pictures embedded with the exam paper, I try to look at the pictures and guess the meaning of that word.....

(Participant 31, Medicine)

4.2.6 Individual Strategy Use for the Social Category

This section reports on the mean frequency score of the social category of vocabulary learning strategies. The social category for vocabulary learning contains eight individual vocabulary learning strategies. These strategies based on Schmitt (1997) taxonomy which are used to discover the meaning of new English words. Table 4.6 below reveals the sequence of social strategies from the most frequent to the least frequent strategies.

Table 4.6: The Level of Using Individual Social Strategies

Individual Strategy	Mean	Percentage	Standard Deviation	Frequency Category
SOC 4 Ask classmates for meaning	3.39	67.8percent	1.179	Medium use
SOC 1 Ask teacher for L1 translation	3.34	66.8percent	1.199	Medium use
SOC 8 Interact with native speakers	3.07	61.4percent	1.351	Medium use
SOC 2 Ask teacher for paraphrase or synonym of new word	2.91	58.2percent	1.150	Medium use
SOC 3 Ask teacher for a sentence including the new word	2.82	56.4percent	1.167	Medium use
SOC 5 Discover new meaning through group work activity	2.82	56.4percent	1.216	Medium use
SOC 6 Study and practice meaning in a group	2.75	55percent	1.192	Medium use
SOC 7 Teacher checks students flash cards or word lists for accuracy	2.29	45.8percent	1.189	Low use

As revealed in Table 4.6, the students employed most of the individual strategies for social category at the medium frequency level. There were no strategies used at the high frequency level, whereas one strategy which is ‘teacher checks students flash cards or word lists for accuracy’ (Mean=2.29, Std. Deviation=1.189) was the only social strategy employed at the low frequency level. The most frequent strategies in this category were ‘ask classmates for meaning’ (Mean=3.39, Std. Deviation=1.179) and ‘ask teacher for L1 translation’ strategies (Mean=3.34, Std. Deviation=1.199).

4.2.7 Interview Results of the Individual Strategy Use for the Social Category

This section describes the interview results of the individual strategies use of the social category (see Table 4.7).

Table 4.7: Interview Results of the Individual Strategy Use for the Social Category

Category	Codes	No. of Students	Percentage
Social	Ask Classmates for Meaning (ACM)	29	72.5 percent
	Ask Teacher for L1 Translation (ATFLT)	24	60 percent
	Interact with Professional People in English (IPPE)	22	55 percent
	Ask Others (Friends, Siblings, or Relatives) (AOFSR)	20	50 percent
	Interact with Native Speakers (INS)	10	25 percent
	Discover the Meaning Through Group Activity (DMTGA)	10	25 percent
	Ask Teacher for English Synonym (ATES)	4	10 percent
	Ask Teacher for a Sentence Including the New Word (ATSINW)	2	5 percent
	Teacher Checks Student's Word Lists for Accuracy (TCSWLA)	2	5 percent
	Total of Instances		123

As revealed in Table 4.7, the informants used several strategies related to the social category. Most of the participants (29 out of 40; 72.5percent) said that they ask their classmates in order to discover the meaning of new words when they first encountered:

..... I may ask my classmates about the meaning of new words.....

(Participant 9, Agriculture)

Also, more than a half of the students (24 out of 40 students; 60percent) indicated that they ask their lecturer about the meaning of new words:

.....I keep asking my lecturer about the meanings of new words that we encounter during the class.....

(Participant 14, Engineering)

Regarding the interaction with professional people in English, 22 out of 40 students; (55percent) said that they employ this strategy to know the meaning of unknown words:

.....The first thing I do is to ask someone who is proficient in English like my friends.....

(Participant 36, Medicine)

Half of the informants (20 out of 40; 50percent) pointed out that they ask others such as friends, siblings, or relatives to get the meaning of unfamiliar words:

.....I ask my friends about the meaning of the new word.....

(Participant 4, Engineering)

Some of the students (10 out of 40; 25percent) said that they discover the meaning of new words through interacting with native speakers of English and group work activity:

.....Having a conversation with my classmates, friends, teachers of English, native speakers of English, or hearing them speaking some new vocabulary items also helps me to know more vocabulary.....

(Participant 23, Engineering)

.....Sometimes our lecturer asks us to do a group task inside the class. In this case, we try to find out the meaning of the new words together.....

(Participants 15, Engineering)

Few students(four out of 40; 10percent) indicated asking the lecturer for English synonym in trying to get the meaning of new words:

.....I ask my lecturer to give the word's synonym in English.....

(Participant 5, Agriculture)

Very few students (two out of 40; 5 percent) said that they ask the lecturer to give a sentence including the new word or ask the teacher to check their word lists for accuracy:

.....I may ask the lecturer to give a sentence containing the new word in trying to guess its meaning from the context.....

(Participant 10, Agriculture)

.....I write the new words with their Arabic meanings in lists and then, I show them to my lecturer to correct me or give comments.....

(Participant 37, Medicine)

4.2.8 Individual Strategy Use for the Memory Category

As demonstrated in Table 4.8 below, the memory strategies category for vocabulary learning encompasses 28 individual strategies. The memory strategies under the current investigation were reported being employed in order to consolidate or retain words once they have been encountered. Table 4.8 shows the mean frequency score of each individual strategy under the memory category.

Table 4.8: The Level of Using Individual Memory Strategies

Individual Strategy	Mean	Percentage	Standard Deviation	Frequency Category
MEM 10 Say new word aloud when studying	3.36	67.2 percent	1.686	Medium use
MEM 9 Study the spelling of a word	3.27	65.4 percent	1.254	Medium use
MEM 4 Connect the word in its synonyms and antonyms	3.22	64.4 percent	1.227	Medium use
MEM 12 Study word with a pictorial representation of its meaning	3.22	64.4 percent	1.184	Medium use
MEM 5 Image word form	3.20	64 percent	1.236	Medium use
MEM 2 Use semantic maps	3.16	63.2 percent	1.240	Medium use
MEM 3 Associate the word with its coordinates (phonetically)	3.12	62.4 percent	1.184	Medium use
MEM 1 Connect word to a previous personal experience	3.11	62.2 percent	1.228	Medium use
MEM 6 Image word's meaning	3.10	62 percent	1.221	Medium use
MEM 3 Associate the word with its coordinates	3.04	60.8 percent	1.148	Medium use
MEM 26 Use cognates in study	3.03	60.6 percent	1.198	Medium use
MEM 8 Group words together to study them	2.98	59.6 percent	1.181	Medium use
MEM 25 Paraphrase the word's meaning	2.95	59 percent	1.191	Medium use
MEM 7 Use keyword method	2.94	58.8 percent	1.279	Medium use
MEM 11 Use physical action when learning a word	2.89	57.8 percent	1.293	Medium use
MEM 24 Part of speech (remembering)	2.79	55.8 percent	1.231	Medium use
MEM 28 Use semantic features grids	2.76	55.2 percent	1.175	Medium use
MEM 20 Use new words in sentences	2.60	52 percent	1.221	Medium use
MEM 23 Affixes and roots (remembering)	2.59	51.8 percent	1.266	Medium use
MEM 18 Study the sound of a word	2.57	51.4 percent	1.200	Medium use
MEM 27 Learn the word of an idiom together	2.53	50.6 percent	1.212	Medium use
MEM 14 Use scales for gradable adjectives	2.45	49 percent	1.192	Low use
MEM 17 Group words together spatially on a page	2.43	48.6 percent	1.213	Low use
MEM 16 Loci method	2.41	48.2 percent	1.227	Low use
MEM 22 Configuration	2.40	48 percent	1.306	Low use
MEM 21 Underline initial letter of the word	2.39	47.8 percent	1.246	Low use
MEM 15 Peg method	2.37	47.4 percent	1.209	Low use
MEM 19 Groups words together within a storyline	2.23	44.6 percent	1.180	Low use

As seen in Table 4.8 above, most of the strategies under this category have been used at the medium frequency level (21 out of 28), whereas seven strategies have been employed at the low frequency level. There were no strategies employed at the high frequency level in order to consolidate words once they have been encountered. The most frequent strategy under this category was 'Say new word aloud when studying' (Mean=3.36, Std. Deviation=1.686), whereas the least frequency strategy employed

under this category was ‘Groups words together within a storyline’ (Mean=2.23, Std. Deviation=1.180).

4.2.9 Interview Results of the Individual Strategy Use for the Memory Category

Table 4.9 below demonstrates the qualitative results of the individual strategies use of the memory category as reported by the students.

Table 4.9: Interview Results of the Individual Strategy Use for the Memory Category

Category	Codes	No. of Students	Percentage
Memory	Group Words Together to Study Them (GWTST)	34	85 percent
	Use New Words in Sentences (UNWS)	14	35 percent
	Study the Spelling of Words (SSW)	12	30 percent
	Say New Words Silently When Studying (SNWSWS)	11	27.5 percent
	Study the Sounds of Words (SSOW)	11	27.5 percent
	Say New Words Aloud When Studying (SNWAWS)	10	25 percent
	Connect the Words with Synonyms and Antonyms (CWSA)	7	17.5 percent
	Remember Parts of Speech (RPOS)	4	10 percent
	Group Words with Their English Definitions (GWTED)	4	10 percent
	Use Keyword Method (UKM)	1	2.5 percent
	Associate Words with Arabic Sounds (AWAS)	1	2.5 percent
	Associate Words with Their Coordinates (AWTC)	1	2.5 percent
	Use Physical Actions (UPA)	1	2.5 percent
	Group Words Within a Storyline (GWWS)	1	2.5 percent
Total of Instances		112	

The table above showed that most of the participants (34 out of 40; 85percent) indicated that they group or write down the newly learned words in order to review them later:

.....During the class, I try to underline the unknown words and write it down with its meaning on notebook to review it when I go back home.....

(Participant 1, Agriculture)

The second frequent strategy employed by the students was using new words in sentences. A number of 14 out of 40 students; (35percent) reported using this strategy in order to memorize the newly learned words:

.....I try to put these words in simple sentences to help me remembering these words.....

(Participant 35, Medicine)

The students who pointed out that they study the spelling of new learned words were 12 out of 40 students (30percent). A comment on that is as follows:

.....I try to practice the spelling of these words.....

(Participant 13, Engineering)

Regarding repeating the new words silently and study the sound of words, 11 out of 40 students; 27.5percent said that they employ these strategies to help them memorizing the newly learned words.

.....I repeat the words I learned silently to memorize them.....

(Participant 20, Engineering)

..... I sometimes watch soundtrack movies to learn new more vocabulary items with pronunciation, and then I take notes to review them

(Participant 17, Engineering)

Quarter of the students (10 out 40; 25percent) indicated repeating the newly learned words loudly in order to memorize them:

.....I repeat them loudly and I remember that I recorded my voice repeating these words.....

(Participant 19, Engineering)

Few students (seven out of 40; 17.5percent) said that they connect the new words with their English synonyms or antonyms to memorize them:

.....This folder contains the new English words with their meanings, synonyms, and antonyms.....

(Participant 8, Agriculture)

Very few students (four out of 40; 10percent) reported memorizing the newly learned words with their English definition or according to their part of speech:

.....I write down the new words with its meaning or its definition.....

(Participant 11, Agriculture)

.....I classify the words based on their grammatical category (nouns in one list, verbs in one list).....

(Participant 39, Medicine)

Only one student out of 40; (2.5percent) reported using keyword method, associate words with Arabic sounds, associate words with their coordinates, use physical actions, and group words within a storyline as follows:

.....I know the meaning of certain words by remembering the keyword, I check the meaning of the keyword and try to memorize it.....

(Participant 21, Engineering)

.....I try to check if the word is similar to an Arabic word in terms of the pronunciation.....

(Participant 12, Agriculture)

.....Sometime, I put some English labels under physical objects in order to memorize new vocabulary.....

(Participant 4, Agriculture)

.....If we don't understand certain words, we try to describe the meaning using objects, hands, and easy definitions.....

(Participant 18, Engineering)

.....I like to write short English stories; I use the new vocabulary in these stories in order to practice them.....

(Participant 30, Medicine)

4.2.10 Individual Strategy Use for the Cognitive Category

This section reveals the mean frequency score of the cognitive category of vocabulary learning strategies. Cognitive category for vocabulary learning contains nine individual vocabulary learning strategies. Table 4.10 below demonstrates the sequence of cognitive strategies from the most frequent to the least frequent strategies.

Table 4.10: The Level of Using Individual Cognitive Strategies

Individual Strategy	Mean	Percentage	Standard Deviation	Frequency Category
COG 1 Verbal repetition	3.41	68.2 percent	1.271	Medium use
COG 2 Written repetition	3.29	65.8 percent	1.276	Medium use
COG 7 Take notes in class	2.83	56.6 percent	1.357	Medium use
COG 3 Word lists	2.82	56.4 percent	1.271	Medium use
COG 5 Keep a vocabulary notebook	2.80	56 percent	1.298	Medium use
COG 8 Use the vocabulary section in your textbook	2.79	55.8 percent	1.236	Medium use
COG 6 Flash cards	2.56	51.2 percent	1.333	Medium use
COG 9 Listen to tape of word lists	2.53	50.6 percent	1.287	Medium use
COG 4 Put English labels on physical objects	2.49	49.8percent	2.293	Low use

As demonstrated in Table 4.10, most of the strategies under this category have been employed at the medium frequency level. There were no strategies which have been used at the high frequency level. The only strategy used at the low frequency level was ‘Put English labels on physical objects’ (Mean=2.49, Std. Deviation=2.293). The most frequent strategy under this category was ‘Verbal repetition’ (Mean=3.41, Std. Deviation=1.271).

4.2.11 Interview Results of the Individual Strategy Use for the Cognitive Category

Table 4.11 illustrates the results of the semi-structured interviews regarding the individual vocabulary learning strategies use for the cognitive category as reported by the students.

Table 4.11: Interview Results of the Individual Strategy Use for the Cognitive Category

Category	Codes	No. of Students	Percentage
Cognitive	Keep a Vocabulary Notebook (KVN)	19	47.5 percent
	Take Notes in Class (TNC)	17	42.5 percent
	Verbal Repetition (VR)	16	40 percent
	Written Repetition (WR)	8	20 percent
	Put English Labels on Physical Objects (PELPO)	2	5 percent
	Listen to Tape of Word Lists (LTWL)	2	5 percent
	Total of Instances	64	

The interviews' results show that 'keeping a vocabulary notebook' (19 out of 40 students; 47.5percent) was the most frequent cognitive strategy employed by the students to learn the newly learned words:

.....I write the new words along with its Arabic translation in my vocabulary notebook.....
(Participant 2, Agriculture)

The second frequent strategy used by the students in this category was 'taking notes in class'. 17 out 40 students (42.5percent) reported using this strategy as follows:

.....I take notes of the new words I learned in class.....
(Participant 11, Agriculture)

A considerable number of the students (16 out of 40; 40percent) indicated repeating the words verbally in order to retain them in their memories:

.....I keep repeating the words verbally to practice pronouncing the words.....

(Participants 28, Engineering)

Some of the students (eight out of 40; 20percent) said that they keep writing the new words as a way to retain those words in the future:

.....I write the new words several times to remember the spelling of these words.....

(Participant 33, Medicine)

Only two students out of 40; (5percent) showed that they put English labels on physical objects, and listen to tape recorder containing the new words to retain them:

.....I write the new words in a big paper in front of my bed.....

(Participant 25, Engineering)

.....I repeat them loudly and I remember that I recorded my voice repeating these words.....

(Participant 29, Medicine)

4.2.12 Individual Strategy Use for the Metacognitive Category

Table 4.12 demonstrates the mean frequency score of metacognitive strategies for vocabulary learning. The strategies under this category include five individual strategies used to retain the new learned words.

Table 4.12: The Level of Using Individual Metacognitive Strategies

Individual Strategy	Mean	Percentage	Standard Deviation	Frequency Category
MET 3 Skip or pass new word	2.75	55percent	1.235	Medium use
MET 2 Use English language media	2.69	53.8percent	1.285	Medium use
MET 5 Continue to study word overtime	2.60	52percent	1.160	Medium use
MET 1 Testing oneself with word lists	2.58	51.6percent	1.263	Medium use
MET 4 Use spaced word practiced	2.48	49.6percent	1.119	Low use

As revealed in Table 4.12, most of the strategies under this category have been employed at the medium frequency level. There were no strategies which have been used at the high frequency level. The only strategy used at the low frequency level was ‘Use spaced word practiced’ (Mean=2.48, Std. Deviation=1.119). The most frequent strategy under this category was ‘Skip or pass new word’ (Mean=2.75, Std. Deviation=1.235).

4.2.13 Interview Results of the Individual Strategy Use for the Metacognitive Category

Table 4.13 illustrates the results of the semi-structured interviews concerning the individual vocabulary learning strategies use for the metacognitive category as reported by the students.

Table 4.13: Interview Results of the Individual Strategy Use for the Metacognitive Category

Category	Codes	No. of Students	Percentage
Metacognitive	Use English Language Media (UELME)	19	47.5 percent
	Continue to Study Word Overtime (CSWO)	12	30 percent
	Use Spaced Word Practiced, Puzzles, or Exercises (USWP)	4	10 percent
	Skip or Pass New Word (SPNW)	3	7.5 percent
	Self-Test (ST)	1	2.5 percent
	Total of Instances	39	

As demonstrated in Table 4.13, the students used several strategies of metacognitive category. The most frequent strategy reported by the students was 'using English language media'. 19 out of 40; (47.5percent) reported using this strategy as follows:

.....I like to watch English movies and try to elicit some new words.....

(Participant 1, Agriculture)

Some other students (12 out of 40; 30 percent) indicated continuing study the new words over time as follows:

.....I write down the new English words on my vocabulary note in order to review when I go back home.....

(Participant 24, Engineering)

The results are also showed that four out of 40 students (10percent) reported that they use spaced word practiced, solve puzzles or exercises to enlarge their English vocabulary:

.....I like to solve vocabulary puzzles, exercises and quizzes to learn new words....

(Participant 9, Agriculture)

Very few students (three out of 40; 7.5percent) said that they skip or pass new words to check them later:

.....I try to guess the meaning from the context, and then skip it if I couldn't guess.....

(Participant 27, Engineering)

Only one student out of 40(2.5percent) indicated using self-test in order to retain and memorize the newly learned vocabulary:

.....I may ask my brother or sister to ask me about the meaning of the new words or I may make self-exam to evaluate myself in English vocabulary.....

(Participant 34, Medicine)

4.2.14 The 10 Most Employed Vocabulary Learning Strategies

This section intends to demonstrate the 10 most used vocabulary learning strategies. The sequence of the strategies is based on the frequency score for each strategy. Table 4.14 shows the most popular vocabulary learning strategies used by all respondents.

Table 4.14: The 10 Most Employed Vocabulary Learning Strategies

Strategy	Item No.	Category	Mean	Percentage	Standard Deviation
Guess meaning from textual context	5	DET	3.63	72.6 percent	1.153
Analyze through available pictures or gestures	4	DET	3.48	69.6 percent	1.093
Verbal repetition	46	COG	3.41	68.2 percent	1.271
Use monolingual dictionary	7	DET	3.40	68 percent	1.264
Ask classmates for meaning	13	SOC	3.39	67.8 percent	1.179
Say new word aloud when studying	27	MEM	3.36	67.2 percent	1.686
Ask teacher for L1 translation	10	SOC	3.34	66.8 percent	1.199
Check for L1 cognate	3	DET	3.33	66.6percent	1.133
Written repetition	47	COG	3.29	65.8 percent	1.276
Study the spelling of a word	26	MEM	3.27	65.4 percent	1.254

As Table 4.14 shows, the 10 most used vocabulary learning strategies were ‘Guess meaning from textual context’ (Mean=3.63, Std. Deviation=1.153), ‘Analyze through available pictures or gestures’ (Mean=3.48, Std. Deviation=1.093), ‘Verbal repetition’ (Mean=3.41, Std. Deviation=1.271), ‘Use monolingual dictionary’ (Mean=3.41, Std. Deviation=1.264), ‘Ask classmates for meaning’ (Mean=3.39, Std. Deviation=1.179), ‘Say new word aloud when studying’ (Mean=3.36, SD=1.686), ‘Ask teacher for L1 translation’ (Mean=3.34, Std. Deviation=1.199), ‘Check for L1

cognate' (Mean=3.33, Std. Deviation=1.133), 'Written repetition' (Mean=3.29, Std. Deviation=1.276), 'Study the spelling of a word' (Mean=3.27, Std. Deviation=1.254) respectively. The table also indicates that four of the most employed strategies belong to the determination category, two to the memory category, two to the social category, two to the cognitive category, and no high frequent strategies were belong to the metacognitive category.

4.2.15 The Interview Results of the 10 Most Employed VLSs

This section provides the interview results of the 10 most used vocabulary learning strategies. The sequence of the strategies is based on the number of students who reported using the strategies (see Table 4.15).

Table 4.15: Interview Results of the 10 Most Employed VLSs

Strategy	Category	No. of Students	Percentage
Use Bilingual Dictionary (UBD)	Determination	40	100 percent
Group Words Together to Study Them (GWTST)	Memory	34	85 percent
Ask Classmates for Meaning (ACM)	Social	29	72.5 percent
Guess Meaning from Context (GMFC)	Determination	28	70 percent
Ask Teacher for L1 Translation (ATFLT)	Social	24	60 percent
Interact with Professional People in English (IPPE)	Social	22	55 percent
Ask Others (Friends, Siblings, or Relatives) (AOFSR)	Social	20	50 percent
Use English Language Media (UELM)	Metacognitive	19	47.5 percent
Keep a Vocabulary Notebook (KVN)	Cognitive	19	47.5 percent
Use Monolingual Dictionary (UMD)	Determination	17	42.5 percent

Table 4.15 above demonstrates that four strategies related to the social category were among the 10 most used strategies: 'ask classmates for meaning' (85 percent), 'ask teacher for L1 translation' (60 percent), 'interact with professional people in English' (55 percent), and 'ask others' (50 percent) successively. Among the above strategies, three strategies belong to the determination category: 'use bilingual dictionary'

(100percent), 'guess meaning from context' (70 percent), and 'use monolingual dictionary' (42.5 percent). Only one strategy belongs to each of the memory, cognitive, and metacognitive categories were among the 10 most employed strategies as reported by the students: 'group words together to study them' (85 percent), 'keep a vocabulary notebook' (47.5 percent), and 'use English language media' (47.5 percent) respectively.

4.2.16 The 10 Least Employed Vocabulary Learning Strategies

Table 4.16 indicates the 10 least used vocabulary learning strategies. The sequence of the strategies is based on the frequency of as reported by the respondents.

Table 4.16: The 10 Least Employed Vocabulary Learning Strategies

Strategy	Item No.	Category	Mean	Percentage	Standard Deviation
Flash cards	9	DET	2.17	43.4 percent	1.170
Groups words together within a storyline	36	MEM	2.23	44.6 percent	1.180
Teacher checks students flash cards or word lists for accuracy	16	SOC	2.29	45.8 percent	1.189
Peg method	32	MEM	2.37	47.4 percent	1.209
Underline initial letter of the word	38	MEM	2.39	47.8 percent	1.246
Configuration	39	MEM	2.40	48 percent	1.306
Loci method	33	MEM	2.41	48.2 percent	1.227
Group words together spatially on a page	34	MEM	2.43	48.6 percent	1.213
Use scales for gradable adjectives	31	MEM	2.45	49 percent	1.192
Use spaced word practiced	58	MET	2.48	49.6 percent	1.119

As Table 4.16 shows, the 10 least used vocabulary learning strategies were 'Flash cards' (Mean=2.17, Std. Deviation=1.170), 'Groups words together within a storyline' (Mean=2.23, Std. Deviation=1.180), 'Teacher checks students flash cards

or word lists for accuracy’ (Mean=2.29, Std. Deviation=1.189), ‘Peg method’ (Mean=2.37, Std. Deviation=1.209), ‘Underline initial letter of the word’ (Mean=2.39, Std. Deviation=1.246), ‘Configuration’ (Mean=2.40, Std. Deviation=1.306), ‘Loci method’ (Mean=2.41, Std. Deviation=1.227), ‘Group words together spatially on a page’ (Mean=2.43, Std. Deviation=1.213), ‘Use scales for gradable adjectives’ (Mean=2.45, Std. Deviation=1.192), and ‘Use spaced word practiced’ (Mean=2.48, Std. Deviation=1.119) respectively. The strategies displayed above indicate that seven of the least employed strategies belong to the memory category, one to the determination category, one to the social category, one to the metacognitive category, and no individual strategies belong to the cognitive category were reported to be among the least used vocabulary learning strategies.

4.2.17 The Interview Results of the 10 Least Employed VLSs

Table 4.17 indicates the 10 least used vocabulary learning strategies as reported by the students through semi-structured interviews. The sequence of the strategies is also based on the number of students who reported using such strategies.

Table 4.17: Interview Results of the 10 Least Employed VLSs

Strategy	Category	No. of Students	Percentage
Use Keyword Method (UKM)	Memory	1	2.5 percent
Associate Words with Arabic Sounds (AWAS)	Memory	1	2.5 percent
Associate Words with Their Coordinates (AWTC)	Memory	1	2.5 percent
Use Physical Actions (UPA)	Memory	1	2.5 percent
Group Words Within a Storyline (GWWS)	Memory	1	2.5 percent
Self-Test	Metacognitive	1	2.5 percent
Put English Labels on Physical Objects (PELPO)	Cognitive	2	5 percent
Listen to Tape of Word Lists (LTWL)	Cognitive	2	5 percent
Analyze Through Available Pictures or Gestures (ATAPG)	Social	2	5 percent
Teacher Checks Student’s Word Lists for Accuracy (TCSWLA)	Determination	2	5 percent

Table 4.17 above shows that five strategies belong to the memory category were among the 10 least used strategies by the students: 'use keyword method' (2.5 percent), 'associate words with Arabic sounds' (2.5percent), 'associate words with their coordinates' (2.5 percent), 'use physical actions' (2.5 percent), and 'group words within a storyline' (2.5percent) respectively. Among the above strategies, two strategies belong to the cognitive category: 'put English labels on physical objects' (5percent), and 'listen to tape for word lists' (5percent). Only one strategy belongs to each of the determination, social, and metacognitive categories were among the 10 least employed strategies as reported by the students: 'teacher checks student's word lists for accuracy' (5percent), 'analyze through available pictures or gestures' (5percent), and 'self-test' (5percent) successively.

4.3 Discussion of the Findings for Questions Number One and Two

With regard to the first two questions in the current research, the respondents reported using a wide variety of VLSs. Also, the students showed a medium degree of strategy use in all the five categories of vocabulary learning strategies with preference to determination category, followed by social, memory, metacognitive, and cognitive category. The most frequently used strategy was “guess meaning from textual context”, while the least frequently used strategy was “using flashcards”. This section discusses the findings obtained to answer research question number one: *What types of vocabulary learning strategies do JUST students use?* and it also discusses the findings of research question number two: *What is the level of using vocabulary learning strategies among JUST students?*

4.3.1 Students' Overall Strategy Use

The overall frequency strategy use for all respondents was 2.9 based on a five-point likert scale, indicating medium level of strategy use. The findings revealed that most of the students reported medium strategy use, while one-fourth reported low strategy use and one-fifth reported high strategy use. The five categories had means of 2.76 to 3.13, all in the medium range of use. The least frequently to the most frequently used categories were cognitive (2.76), metacognitive (2.77), memory (2.87), social (2.97), and determination (3.13).

The results show that the students used vocabulary learning strategies at the medium frequency level. This result is congruent with a number of studies which found medium mean scores of strategy use (Green and Oxford, 1995; Wharton, 2000; Rao, 2006; Celic and Toptas, 2010; and Cengizhan, 2011). This finding is expected as students employed a wide variety of strategies, some to a lesser extent and others to a larger extent (Vrettou, 2011). One possible reason for JUST students' medium use of VLSs is that they are not aware of the various VLSs because they have not been introduced to them (Kudo, 1999; Fan, 2003). Another explanation for such finding is that, students rely heavily on specific strategies and they rarely exploit other VLSs (Gu and Johnson, 1996).

4.3.2 Students' Use of VLSs in the Five Categories

As for the use of the five categories of VLSs, Jordanian students showed a high interest in employing determination strategies rather than other categories, it become in the first rank among all other categories. This result in line with the other studies

conducted to investigate VLSs in EFL context (Zarafshan, 2002; Sarani and Kafipour, 2008; Hamzah, Abdullah and Kafipour, 2009; Celic and Toptas, 2010). Riazi and Rahimi (2005) points out that determination strategies are critical for EFL learners; they help them to pass over their lack of English proficiency in the limited engagement native English environment. In addition, Oxford (1990) indicates that determination strategies are employed to overcome the obstacles the learners face when learning the target language. In the EFL learning context, Jordanian learners face difficult learning situations and environments as Oxford (1990) states “less adept language learners often panic, tune out, or grab the dog eared dictionary and try to look up every unfamiliar word-harmful responses which impede progress toward proficiency” (p.47).

Social strategies also had a high mean score and it came in the second rank preceded by determination strategies. The place of social strategies varied based upon the cultural background where the study has been conducted. It came in the first place (Wharton, 2000 in Singapore; Kojima and Yoshikawa, 2004 in Japan), second rank (Oxford and Ehrman, 1995 in the USA; Lee, 2003 in Korea; Hong-Nam and Leavell, 2006 in the USA), to the last rank (Rao, 2006 in China; Lee and Oxford, 2008 in Korea). Such finding gives an impression of the Jordanian people who are always willing to get in social communications and interactions, and it shows the importance of communication in the Jordanian society and education in particular. Yang (1996) justified the preference of social strategy use due to the learners’ unlimited exposure to multimedia, computer, and networking technologies. These tools give

opportunities for learners to be involved in foreign cultures and get more chances to employ social strategies in and out of English classes.

In the present study, memory strategies came in the third place with a medium mean score. The same place of this category was occupied by this category in other studies such as (Kudo, 1999 in Japan; Wang, 2004 in Taiwan). One possible reason for this result is that, college students are mature enough to employ memory strategies which involve more complex mental processing and cognitive effort (Liao, 2004; Wang, 2004). Nonetheless, some of the memory strategies are likely not to be used because learners are not familiar with such strategies (Riazi and Rahimi, 2005).

Metacognitive strategies were also come with a medium mean score in the fourth rank. The same rank of metacognitive strategies appeared in other studies (Kudo, 1999 in Japan; Wang, 2004 in Taiwan; Celic and Toptas, 2010 in Turkey). This finding can be an indication of the teacher-centered teaching methods which are adopted in Jordan. Students seem to be not aware of their learning progress and they do not think about setting goals for personal improvement, planning their studies, find ways to practice English, and self-evaluation.

Cognitive strategies came in the fifth place with a medium mean score; this finding is in accord with some of the previous studies conducted to investigate VLSs among students (Kazamia, 2003 in Greece; Rao, 2006 in China; Celic and Toptas, 2010 in Turkey). The less usage of cognitive strategies by JUST students might be attributed to the less emphasis on advocating the employment of such strategies. In Jordan, lecturers and teachers rarely encourage students to take notes in class or use

repetition to learn English in spite of the importance of these strategies in learning a new language. Based on the aforementioned reasons, it would be difficult for students to adopt these strategies in learning English.

4.3.3 Individual Strategy Use of Vocabulary Learning Strategies

The presentation of means of individual strategies use would provide a clearer picture of the patterns of VLSs employed by JUST students. The majority of strategies fall in medium frequency use, while some of the strategies fall in low frequency use; only one strategy falls in high frequency use. These findings reveal that the respondents in the current study do not frequently employ various vocabulary learning strategies in their English learning. The following section explains and discusses in details the frequency in using individual strategies due to the strategies categories.

4.3.3.1 Individual Strategy Use for the Determination Category

Determination strategies are employed to find the new encountered words immediately without referring to any resources or other's expertise. Learners can use either dictionary strategies or guessing strategies to determine the meaning of unknown words. In the present study, guessing strategies 'guess meaning from textual context', and 'analyze through available pictures and gestures' were the most frequently used determination strategies, which is consistent with the results of Fan (2003), and Wang (2004). The students' frequent use of guessing strategy might be attributed to the fact that they are motivated to develop their guessing strategies, so they can get better marks in quizzes and exams. Students can only rely on guessing

strategies while taking quizzes or exams rather than referring to dictionaries. Schmitt (2000) emphasizes the importance of guessing strategies which all learners should employ taking into consideration the surrounding text for confirmation of guessing.

In regard to dictionary strategies, the students' most preferred dictionary was 'monolingual dictionary'. Apparently, there was a tendency among the students to use monolingual dictionary and they do not prefer to use bilingual dictionary which is congruent with Hamzah, Abdullah, and Kafipour (2009) findings. The possible reason of the frequent use of monolingual dictionary might be related to the medium of instruction used at JUST which is English. Monolingual dictionaries help students to look up words by means of the same language (English) which is extremely necessary at JUST. Bejoint and Moulin (1987) claim that monolingual dictionary has the extra merit of directly introducing the learner to the lexical system of the L2. Students at JUST would be in an urgent need to such a kind of dictionary to look up words' definitions in the target language, so they can perform better in their studies.

4.3.3.2 Individual Strategy Use for the Social Category

Social strategies involve interacting with others or asking others for information whether inside or outside classrooms. Schmitt (1997) states that “vocabulary learning is an activity best achieved individually” (p.226). However, the social strategies in the present study were the second most frequent strategies reported by the students at JUST. The social strategies of “ask classmates for meaning”, and “ask teacher for L1 translation” were the most frequent strategies within the social category. These results are concord with the findings of previous studies (Lee and

Oxford, 2003; Chen, 1998; Wharton, 2000; Wang, 2004; Yang, 2010; Vrettou, 2011) which revealed that EFL learners reported a high use of social strategies.

In this respect, culture may play an important role in the popularity of social interactions behaviors (Vrettou, 2011). It is assumed that Jordanian students feel more comfortable when employing social strategies in order to improve their communication skills. This explains the personality of Jordanian people and the significance of interaction in the Jordanian society and Jordanian classrooms as well. Furthermore, the students tend to ask their teacher for L1 translation which is probably related to saving time spent on explaining new words. Explaining new words by teachers can be accessed more quickly and understood more easily by the students (Schmitt, 1997).

4.3.3.3 Individual Strategy Use for the Memory Category

Memory strategies are related to retaining words with some previously learned knowledge. The memory category was ranked in the third place in the present study. The memory strategies “say new word aloud in studying” and “study the spelling of a word” were the most frequent strategies employed by JUST students. These findings are consistent with the previous research works findings (Kudo, 1999; Schmitt, 1997; Chen, 1998; Lin, 2001; Wang, 2004). According to the Depth of Processing Hypothesis (Craik and Lockhart, 1972; Craik and Tulving, 1975), “shallow” processing involve stimuli processing in terms of its visual or acoustic properties contribute to short-term memory, while deep processing is related to stimuli processing in which it is analyzed for meaning and involve cognitive structure contribute to long-term memory.

Apparently, the participants tend to use “shallow” sensory processing (i.e. by means of visual or acoustic properties). This is evident in the high frequency score of “say new word aloud in studying” and “study the spelling of a word”. Oxford (1990) indicates that “although memory strategies can be powerful contributors to language learning, some research works show that students rarely report using these strategies” (p. 40). The participants of the current study reported rare use of some memory strategies especially those which need “deep” processing level (i.e. Loci method, Peg method, configuration, use scales for gradable adjectives, underline initial letter of the word, group words together within a storyline, and group words together spatially on a page).

One explanation for the insufficient use of “deep” processing strategies is that learners are not familiar with such strategies (Riazi and Rahimi, 2005). Another possible interpretation is that these strategies require sophisticated mental processing and complicated cognitive efforts compared to “shallow” processing level; thus, it would be difficult and time-consuming for learners to adopt those strategies (Schmitt, 1997). Also, Cohen and Apeh (1981) find that the effective use of deep processing strategies is largely dependent on the language proficiency of L2 learners. Jordanian students are still in the primary stage of second language acquisition and they seem unable to employ these strategies to recall words. Consequently, it would be too difficult and complicated for JUST students to generate semantic elaboration or to make associations by their own due to the limited number of lexical items they have.

4.3.3.4 Individual Strategy Use for the Cognitive Category

Cognitive strategies involve operating the incoming information and they do not focus directly on mental processing (Schmitt, 2000). In spite of the importance of cognitive strategies, all of these strategies fall in the medium range of use except for one strategy which falls in the low range of use. However, the strategies of “verbal repetition” and written repetition were the most frequently used cognitive strategies which concur with the findings of past studies (Kudo, 1999; Chen, 1998; Schmitt, 2000; Wang, 2004). This shows that Jordanian students prefer to use repetition strategies to learn English vocabulary. This can be attributed to the ease of use and its influence of prior educational experiences. Also, the relatively popular use of these strategies might also be related to the educational system in Jordan which puts great emphasis on using such strategies.

On the other hand, the students seldom used strategies which need study aids (i.e. flash cards, listen to tape of word lists, and put English labels on physical objects). These strategies are also ranked among the least used strategies (Griffiths, 2003a; Kazamia, 2003; Vrettou, 2009). A possible reason of such results is because of the extra efforts that students should take to create these study aids on their own. Also, it would take extra time to undertake the activities of study aids outside the classroom. As a result, the students would be more comfortable to employ easy strategies which save time, efforts, and do not need a deep mental processing such as verbal repetition and written repetition.

4.3.3.5 Individual Strategy Use for the Metacognitive Category

Metacognitive strategies involve executive control over the learners' vocabulary learning through planning, operating, and evaluating. Metacognitive strategies were ranked the second least frequent use strategies. In the present study, the most frequently used metacognitive strategies were "skip or pass new word" and "use English language media". These findings are in line with the previous research works (Liao, 2004; Wang, 2004). Overall, Jordanian students are not aware of determining what they should learn, how to overcome their struggles in learning English vocabulary, and how to manage their learning process.

The reasons of inadequate use of metacognitive strategies might be because of the less impact of wash back approach (i.e. the negative or positive effect of evaluation on teaching and learning). Jordanian students consider testing as insignificant method to assess what they have learned. Another possible reason is because of the EFL environment in Jordan, learners consider English as an academic subject rather than as a means of communication.

Also, the students' little attention to English media might be the reason of their overall low proficiency level in English language, and relying on using authentic materials or English media may construct a big challenge for them. Generally, the subjects were unable to organize their vocabulary learning process, and they do not consider it as a long-term process. This might be justified due to the fact that teachers in Jordan control the whole learning process, organize, and plan all learning activities or tasks for their students. Therefore, the students become very dependent on their teachers and they do not take their own steps in their learning progress.

4.3.3.6 The 10 Most Frequently Used Vocabulary Learning Strategies

This section intends to discuss the 10 most frequently used strategies by JUST students. As mentioned earlier, the most frequently used strategies were four determination strategies 'guess meaning from textual context', 'analyze through available pictures or gestures', 'use monolingual dictionary', and 'check for L1 cognate', two social strategies 'ask classmates for meaning', and 'ask teacher for L1 translation', two memory strategies 'say new word aloud when studying', and 'study the spelling of a word', two cognitive strategies 'verbal repetition', and 'written repetition', and none of the most frequently used strategies were belong to the metacognitive category.

The results revealed that determination strategies were the most preferred strategies among the participants in this study (four out of 10 strategies). It is clear that students prefer to use 'guessing' strategies in order to discover the meaning of new words. Probably, 'guessing' strategies are more convenient to the students in getting the meaning of unknown words without interrupting the flow of reading. Also, using monolingual dictionary strategy was among the most frequently used strategies. This can be attributed to the medium of instruction at JUST which is English. Students need to look up the meaning, synonym, and definition of words in the target language, so they would be able to perform better in their quizzes or exams.

With regard to social category, students demonstrate a clear preference to ask classmates for help and ask teacher for L1 translation. This reflects the personality of Jordanian people who are willing to provide help for others all the time. Another possible explanation is that, students find it easier and time-saving to get the

meaning of unknown words from other people. In this case, students are not required to constantly refer to dictionaries or other resources which could consume extra time and efforts.

Concerning the memory category, the participants in the current study put a great emphasis on using memory strategies: “say new word aloud when studying”, and “study the spelling of a word”. Overtly, the participants paid a considerable attention to the phonological and orthographical strategies which need shallow level of processing rather than the deep processing level. This can also be evidenced by the two most frequently used cognitive strategies, i.e. “verbal repetition”, and “written repetition”. These results are consistent with the previous findings in Schmitt (1997), Chen (1998), and Wang (2004).

Interestingly, none of the metacognitive strategies were listed among the 10 most frequently used strategies. As mentioned earlier, the students seem unaware of their learning progress. This can be attributed to the less effect of the wash-back approach. Teachers in Jordan take control of the entire learning process, organize, and plan all learning activities or tasks for their students. Consequently, the students become very dependent to their teachers, and they would be unable to take part in the process of education which has been emphasized in the recent studies within this field.

4.3.3.7 The 10 Least Frequently Used Vocabulary Learning Strategies

As demonstrated earlier, the least 10 frequently employed strategies were one determination strategy 'flashcards', one social strategy 'teacher checks students flashcards or word lists for accuracy', seven memory strategies 'group words together

within a storyline', 'peg method', 'underline initial letter of the word', 'configuration', 'loci method', 'group words together spatially on a page', and 'use scales for gradable adjectives', one metacognitive strategy 'use spaced word practiced', and none of the cognitive strategies were listed among the least frequently used strategies.

The results show that the least frequently used strategies belong to the memory category. The participants of the present study seem to be unfamiliar with some of the memory strategies (i.e. peg method, loci method, configuration, and use scales for gradable adjectives). Another reason for the least use of those strategies might be related to the difficulty of employing them. The findings also demonstrate that the participants paid a little attention to contextualization of words such as 'group words together within a storyline' which is consistent with the results in O'Malley et.al (1985). Cohen and Apeh (1981) point out that, employing contextualization strategies would be too difficult for students as they require a very high proficiency level.

In addition, the participants do not prefer to use study aids in their learning. This is evident by the less frequent use of strategies like 'flashcards', 'teacher checks students' flashcards or word lists for accuracy'. Probably, the students consider using these strategies as time and efforts wasting as they can refer to other easier resources to learn vocabulary such as textbooks or the vocabulary sections in books. Generally, Jordanian students do not know how to take part in their vocabulary learning, which is confirmed by the absence of metacognitive strategies among the 10 most frequent use strategies, and the presence of one metacognitive strategy among the 10 least frequent use strategies 'use spaced word practiced'. As mentioned earlier, the reason

for this may refer to the teacher-centered teaching methods in Jordan which control the entire process of learning and put less emphasis on learners.

4.3.3.8 Discussion of the Interview Results

As mentioned earlier, semi-structured interviews were conducted with 40 students from three faculties in order to validate the quantitative results of the present research. The discussion of interviews in relation to previous research works is quite difficult due to the lack of studies conducted using the same elicitation method, and the difficulty in getting similarities. With regards to research question number one on the types of VLSs employed by JUST students, the results show that a total of 45 strategies have been reported being used by the informants. All the students reported using determination, social, and memory strategies, followed by cognitive strategies, and metacognitive strategies.

These findings can be an indication that Jordanian students are aware of some of the VLSs. The reasons for not using some other strategies might be related to the perception that they were difficult to use, or the lack of knowledge about VLSs. In addition, there is a lack of emphasis on VLSs in the educational system in Jordan. Most of the students in Jordan have limited understanding of VLSs and how it can facilitate their language learning (Obeidat, 2005).

In respect to the use of VLSs in the five categories, Jordanian students used strategies which are belong to the five main categories of VLSs included in Schmitt's taxonomy. However, the students reported using some other strategies which are not listed in Schmitt's (1997) taxonomy of VLSs. Regarding the

determination category, the students reported using four additional strategies than those listed in Schmitt's taxonomy (i.e. reading different materials, use online dictionary, use electronic dictionary, and use online resources). The students showed a high interest in using dictionary strategies such bilingual dictionary, online dictionary, and electronic dictionary. The most frequently used strategy among students was 'use bilingual dictionary'. These findings are congruent with the results in Sanaoui (1995), Schmitt (1997), and Kudo (1999) who found that using dictionary strategies are very common among foreign language learners.

In regard to the social category, the students used two additional strategies which are not mentioned in Schmitt's classification. These strategies are 'interact with professional people in English', and 'ask others (friends, siblings, and relatives)'. However, the most frequently used strategy was 'ask classmates for meaning'. Many scholars (Wharton, 2000; Kojima and Yoshikawa, 2004; Hong-Nam and Leavell, 2006) lend support to these findings. These studies found that employing social strategies are essential for foreign language learners as it promotes active processing.

In respect to the memory category, the students reported using 14 strategies compared to 28 strategies listed in Schmitt's taxonomy. Also, three additional strategies have been reported being used by the students (i.e. say new words silently when studying, group words with their English definition, and associate words with Arabic sounds). The most frequently used strategy was 'group words together to study them'. Generally, the results of qualitative method demonstrated a tendency among the students to use "shallow" sensory processing rather than strategies with

“deep” mental processing. These findings are in accord with the previous research works (Kudo, 1999; Schmitt, 1997; Wang, 2004).

The interview results also reveal that the respondents reported using six cognitive strategies compared to nine strategies included in Schmitt’s classification of VLSs. No additional strategies were reported by students other than those mentioned in the questionnaire of present study. The most frequent strategy was 'keep a vocabulary notebook'. Interestingly, the respondents did not report using repetition strategies (i.e. verbal and written repetition strategies) more often than other kinds of strategies. These results are in line with the findings in Gu and Johnson (1996), and Fan (2003) who found that Chinese or Hong Kong students do not prefer to use repetition strategies compare to other types of strategies.

Lastly, the informants showed using five metacognitive strategies. The strategies used are similar to the strategies included in Schmitt’s taxonomy. The only difference was in using 'space word practiced'; they showed preferences in using this strategy through certain activities such as puzzles and vocabulary exercises. The most preferred strategy in this category was 'use English language media'. Obviously, the students were aware to expose themselves to English environment through songs, movies, or programs. Such findings are consistent with the findings in Liao (2004), and Wang (2004) who found that Taiwanese students consider English language media as a crucial element to learn new vocabulary.

The interview results suggest that the impact of educational system and methods of teaching in Jordan might be responsible for the variances in eliciting the various

VLSs. Some factors such as motivation, learning styles, and cultural background of the informants' might explain the students' use of new strategies, or non-use of certain strategies (Braxton, 1999; Lunt, 2000). In addition, the results of present research suggest that the selection of VLSs is basically related to the students' prior experiences in language learning and students' needs in their language learning process.

4.4 Variation in Students' Overall Vocabulary Learning Strategies Use

This section tends to explore the patterns of variations in the frequency of vocabulary learning strategies employed by 738 students at JUST. It is also devoted to examining the relationship between the use of vocabulary learning strategies and four variables: gender, language proficiency, academic major, and previous vocabulary learning strategies instruction to give answers to the third research question: *Do the vocabulary learning strategies used by JUST students vary across gender, proficiency level, academic major and previous vocabulary learning strategies instruction?* For this purpose, the researcher used several statistical methods to present the results of data analysis. The statistical methods include:

- a) Descriptive statistics: this method was used in order to show some statistical procedures such as the mean frequency of each category and individual strategies for each category of VLSs, standard deviation, ranges, number of valid cases of one variable and percentage.
- b) T-test: this method was used in order for the researcher to determine the significant differences between the frequency of vocabulary learning

strategies used by the students and three variables: gender, language proficiency, and previous vocabulary learning strategies instruction.

- c) An analysis of variance (ANOVA): this method was employed to determine the significant variations of the frequency of vocabulary learning strategies employed by the students in relation to the academic major of the students. The academic major of the students consists of three main categories: Medicine, Engineering, and Agriculture.

4.4.1 Variation in Students' Overall VLSs Use According to Gender

Tables 4.18 and 4.19 below reveal the differences in using vocabulary learning strategies in relation to gender. T-test was used to determine the difference in using vocabulary learning strategies between male and female students.

Table 4.18: Overall Strategy Use According to Gender

Gender	Mean	Standard Deviation	Significance Level	Level of Use
Male (n=378)	2.86	.555	.057	Medium
Female (n=360)	2.94	.532		Medium

Table 4.19: Independent Samples T-Test of Overall Strategy Use by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Overall	Equal variances assumed	.854	.356	-1.904	736	.057	-.07628	.04006	-.15493	.00237
	Equal variances not assumed			-1.906	735.96	.057	-.07628	.04002	-.15485	.00229

The results of T-Test shown in Tables 4.18 and 4.19 reveal that both male and female students used VLSs at medium frequency level. Female students (Mean= 2.94, Std. Deviation= .532) report slightly higher use of the overall vocabulary learning strategies than male students (M= 2.86, SD= .555). However, no statistical differences were found between males and females in the overall use of vocabulary learning strategies ($t = -1.904$, $df = 736$, $p > .05$).

4.4.2 Interview Results of Overall VLSs Use According to Gender

This section demonstrates the interview results of the difference in the overall use of vocabulary learning strategies according to gender (see Table 4.20).

Table 4.20: Interview Results of the Overall Strategy Use According to Gender

Gender	Percentage	Pattern of Variation
Male (n=20)	82percent	Female>Male
Female (n=20)	93percent	

Table 4.20 shows that female students used VLSs more frequently than male students. This finding is in line with quantitative results in that, female students used

more vocabulary learning strategies than their male counterparts. The next section illustrates the difference of using vocabulary learning strategies according to language proficiency.

4.4.3 Variation in Students' Overall VLSs According to Language Proficiency

Table 4.21 below reveals the differences in using vocabulary learning strategies in relation to language proficiency. T-test was used to determine if there were a difference in using vocabulary learning strategies between low proficiency students and high proficiency students (see Table 4.22).

Table 4.21: Overall Strategy Use According to Language Proficiency

Language Proficiency	Mean	Standard Deviation	Significance Level	Level of Use
Low (n=464)	2.77	.534	.000	Medium
High (n=274)	3.12	.489		Medium

Table 4.22: Independent Samples Test of Overall Strategy Use by Language Proficiency

		Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference		
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Overall	Equal variances assumed	4.038	.045	9.011	736	.000	.35533	.03943	.27792	.43274
	Equal variances not assumed			9.219	613.703	.000	.35533	.03854	.27963	.43102

The results shown in Tables 4.20 and 4.21 revealed that both low proficiency students (Mean= 2.77, Std. Deviation= .534) and high proficiency students (Mean= 3.12, Std. Deviation= .489) used VLSs at medium frequency level. The results of T-Test reveal a statistical difference between high proficiency students and low proficiency students in the overall use of vocabulary learning strategies ($t = 9.219$, $df = 613.703$, $p < .001$). The test reveals that high proficiency students report significantly higher use of the overall vocabulary learning strategies than low proficiency students.

4.4.4 Interview Results of Overall VLSs Use According to Language Proficiency

Table 4.23 below demonstrates the interview results of the difference in using vocabulary learning strategies according to language proficiency.

Table 4.23: Interview Results of the Overall Strategy Use According to Language Proficiency

Language Proficiency	Percentage	Pattern of Variation
High (n=20)	99 percent	High>Low
Low (n=20)	76 percent	

As shown in Table 4.23 above, high proficiency students obviously used vocabulary learning strategies more frequently than low proficiency students. These findings are also consistent with the results obtained from the questionnaire survey. The following section shows the significant differences in using vocabulary learning strategies in relation to academic major.

4.4.5 Variation in Students' Overall VLSs According to Academic Major

Table 4.24 below shows the differences in using vocabulary learning strategies according to academic major. Table 4.25 shows the results of Analysis of Variance (ANOVA) which was used to demonstrate the difference in using vocabulary learning strategies between the students in the three faculties: Medicine, Engineering, and Agriculture.

Table 4.24: Overall Strategy Use According to Academic Major

Academic Major	Mean	Standard Deviation	Significance Level	Level of Use
Medicine (n=205)	2.88	.488		Medium
Engineering (n=291)	2.90	.557	.692	Medium
Agriculture (n=242)	2.92	.576		Medium

Table 4.25: ANOVA Test of Overall Strategy Use by Academic Major

Overall					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.219	2	.110	.368	.692
Within Groups	218.663	735	.298		
Total	218.882	737			

Tables 4.24 and 4.25 show that the students from the three faculties reported using VLSs at medium frequency level. A one-way ANOVA was conducted to examine whether there were statistically significant differences between the overall use of vocabulary learning strategies and academic major. The results reveal no significant differences among students from different disciplines in relation to their use of vocabulary learning strategies ($F = .368, p > .005$).

4.4.6 Interview Results of Overall VLSs Use According to Academic Major

Table 4.26 below shows the variations in the overall use of vocabulary learning strategies in relation to academic major as reported in the interviews.

Table 4.26: Interview Results of the Overall Strategy Use According to Academic Major

Academic Major	Percentage	Pattern of Variation
Medicine (n=12)	81.6 percent	Agriculture>Engineering>Medicine
Engineering (n=16)	87.5 percent	
Agriculture (n=12)	93.3 percent	

As shown in the table above, agriculture students used vocabulary learning strategies more frequently than engineering and medicine students. Engineering students surpassed medicine students in the overall use of vocabulary learning strategies. These findings are compatible with the quantitative results obtained earlier. The next section reveals the variations in using vocabulary learning strategies according to previous vocabulary learning strategies instruction.

4.4.7 Variation in Students' Overall VLSs Use According to Previous VLSs Instruction

Table 4.27 below demonstrates the differences in using vocabulary learning strategies in relation to previous vocabulary learning strategies instruction. Table 4.28 shows the results of T-test which was used in order to determine the significant differences between more experienced students and less experienced students in terms of using vocabulary learning strategies.

Table 4.27: Overall Strategy Use According to Previous VLSs Instruction

Previous VLSs Instruction	Mean	Standard Deviation	Significance Level	Level of Use
Less Experienced (n=537)	2.82	.541	.000	Medium
More Experienced (n=201)	3.13	.487		Medium

Table 4.28: Independent Samples T- Test of Overall Strategy Use by Previous VLSs Instruction

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95percent Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Overall	Equal variances assumed	4.007	.046	7.207	736	.000	.31409	.04358	.22853	.39965
	Equal variances not assumed			7.562	396.218	.000	.31409	.04153	.23244	.39574

Tables 4.24 and 4.25 show that more experienced students (Mean= 3.13, Std. Deviation= .487) used more vocabulary learning strategies than less experienced students (Mean= 2.82, Std. Deviation= .541). Both groups used VLSs at medium frequency level. However, the results of T-Test reveal a significant difference between more experienced students and less experienced students in the overall use of vocabulary learning strategies ($t = 7.562$, $df = 396.218$, $p < .001$).

4.4.8 Interview Results of Overall VLSs Use According to Previous VLSs Instruction

Table 4.29 shows the interview results of the differences in employing vocabulary learning strategies in relation to previous vocabulary learning strategies instruction.

Table 4.29: Interview Results of the Overall Strategy Use According to Previous VLSs Instruction

Previous VLSs Instruction	Percentage	Pattern of Variation
Yes (n=20)	100 percent	More Experienced>Less Experienced
No (n=20)	75 percent	

As revealed in Table 4.29 above, more experienced students have distinctly used vocabulary learning strategies more frequently than less experienced students. These results confirm the results of the questionnaire survey. The next section is devoted to analyze the qualitative results concerning the variations of using vocabulary learning strategies in the five main categories (i.e. determination, social, memory, cognitive, and metacognitive).

4.5. Variation in Students' Strategy Use in the Five Categories

As mentioned earlier, the vocabulary learning strategies in the present investigation have been classified into five main categories. They include strategies used to discover the meaning of a new word when it is first encountered (DET; and SOC), and strategies employed to retain the meaning of words which are previously learned (MEM; COG; and MET). This section demonstrates the variation in students' use of VLSs in the five categories. For this purpose, the researcher used the independent samples T-Test to examine the differences between the use of VLSs in the five categories and gender, language proficiency, and previous VLSs instruction. Analysis of Variances (ANOVA) was used to examine the differences between the use of VLSs in the five categories and academic major.

4.5.1 Variation in Students' Strategy Use in the Five Main Categories According to Gender

Based on the results of T-Test, Table 4.30 below shows the mean, standard deviation, and variation of students' use of vocabulary learning strategies in the five main categories: DET, SOC, MEM, COG, and MET according to gender. Table 4.31 shows the results of the independent samples T-Test to indicate whether there were significant differences in the use of VLSs in the five main categories in relation to gender.

Table 4.30: Variation of Students' Use of VLSs in the Five Main Categories by Gender

Student's Gender		N	Mean	Std. Deviation	Level of Use
Determination	Male	378	3.06	.65016	Medium
	Female	360	3.19	.57272	Medium
Social	Male	378	2.93	.66070	Medium
	Female	360	3.01	.65982	Medium
Memory	Male	378	2.82	.62120	Medium
	Female	360	2.92	.61643	Medium
Cognitive	Male	378	2.76	.75858	Medium
	Female	360	2.76	.79059	Medium
Metacognitive	Male	378	2.78	.87025	Medium
	Female	360	2.74	.84265	Medium

Table 4.31: Independent Samples T- Test of Using VLSs in the Five Main Categories by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Determination	Equal variances assumed	5.292	.022	-2.995	736	.003	-.13532	.04519	-.22403	-.04660
	Equal variances not assumed			-3.004	731.591	.003	-.13532	.04505	-.22376	-.04688
Social	Equal variances assumed	.042	.839	-1.521	736	.129	-.07397	.04862	-.16943	.02148
	Equal variances not assumed			-1.521	734.34	.129	-.07397	.04862	-.16943	.02148
Memory	Equal variances assumed	.011	.917	-2.343	736	.019	-.10677	.04558	-.19624	-.01730
	Equal variances not assumed			-2.343	734.756	.019	-.10677	.04557	-.19623	-.01731
Cognitive	Equal variances assumed	.795	.373	.117	736	.907	.00666	.05703	-.10529	.11861
	Equal variances not assumed			.117	730.071	.907	.00666	.05708	-.10541	.11872
Metacognitive	Equal variances assumed	2.336	.127	.757	736	.449	.04778	.06310	-.07611	.17166
	Equal variances not assumed			.758	735.796	.449	.04778	.06305	-.07601	.17157

As demonstrated in the Table 4.30, female students used vocabulary learning strategies more frequently than their male counterparts in three categories: determination (Mean= 3.19, Std. Deviation= .572), social (Mean= 3.01, Std. Deviation= .659), and memory (Mean= 2.92, Std. Deviation= .616). Both female and male students used cognitive strategies at the same frequency level (Mean= 2.76, Std. Deviation= .758, .790) respectively. On the other hand, male students used metacognitive strategies more frequently than female students (Mean= 2.78, Std. Deviation = .870).

The results of independent sample T-Test in Table 4.31 reveal a statistically significant difference between male and female students in the use of determination strategies ($t = 9.219$, $df = 613.703$, $p < .001$). Female students surpassed male students in using determination category ($p < .05$). However, no significant differences were found in the use of social strategies ($p > .839$), memory strategies ($p > .917$), cognitive strategies ($p > .373$), and metacognitive strategies ($p > .127$).

4.5.2 Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Gender

Table 4.32 below shows the variation in students' strategy use in the five main categories of vocabulary learning strategies. These findings were obtained through semi-structured interviews with 40 students at JUST.

Table 4.32: Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Gender

Category	Gender	No. of Students	Percentage	Pattern of Variation
Determination	Male (n=20)	20	100 percent	Female=Male
	Female (n=20)	20	100 percent	
Social	Male (n=20)	20	100 percent	Female=Male
	Female (n=20)	20	100 percent	
Memory	Male (n=20)	20	100 percent	Female=Male
	Female (n=20)	20	100 percent	
Cognitive	Male (n=20)	10	50 percent	Female>Male
	Female (n=20)	18	90 percent	
Metacognitive	Male (n=20)	12	60 percent	Female>Male
	Female (n=20)	15	75 percent	

As shown in table 4.32, female and male students were in the same level of using vocabulary learning strategies in three categories: determination, social, and memory. Female students used cognitive and metacognitive strategies more frequently than male students. These findings are inconsistent with the quantitative results in that, male students used metacognitive strategies more than their female counterparts. What follows is a description of the difference in using vocabulary learning strategies in the five main categories according to language proficiency.

4.5.3 Variation in Students' Strategy Use in the Five Main Categories According to Language Proficiency

Tables 4.33 and 4.34 below show the differences in students' use of vocabulary learning strategies in the five main categories: DET, SOC, MEM, COG, and MET according to language proficiency.

Table 4.33: Variation of Students' Use of VLSs in the Five Main Categories According to Language Proficiency

Language Proficiency	N	Mean	Std. Deviation	Level of Use	
Determination	High	274	3.33	.53395	Medium
	Low	464	3.00	.63000	Medium
Social	High	274	3.10	.63445	Medium
	Low	464	2.89	.66460	Medium
Memory	High	274	3.12	.56059	Medium
	Low	464	2.72	.60858	Medium
Cognitive	High	274	2.99	.75278	Medium
	Low	464	2.63	.75568	Medium
Metacognitive	High	274	3.02	.90929	Medium
	Low	464	2.61	.78595	Medium

Table 4.34: Independent samples T- Test of Using VLSs in the Five Main Categories by Language Proficiency

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Determination	Equal variances assumed	9.338	.002	7.291	736	.000	.33118	.04542	.24201	.42035
	Equal variances not assumed			7.606	648.100	.000	.33118	.04354	.24568	.41668
Social	Equal variances assumed	1.912	.167	4.185	736	.000	.20838	.04980	.11062	.30613
	Equal variances not assumed			4.235	594.290	.000	.20838	.04920	.11174	.30501
Memory	Equal variances assumed	3.502	.062	8.743	736	.000	.39386	.04505	.30542	.48229
	Equal variances not assumed			8.930	610.783	.000	.39386	.04410	.30724	.48047
Cognitive	Equal variances assumed	1.448	.229	6.248	736	.000	.35921	.05749	.24634	.47208
	Equal variances not assumed			6.254	574.608	.000	.35921	.05744	.24640	.47202
Metacognitive	Equal variances assumed	5.208	.023	6.472	736	.000	.41116	.06353	.28644	.53588
	Equal variances not assumed			6.235	508.644	.000	.41116	.06595	.28160	.54072

As seen in Tables 4.33, high proficiency students reported using vocabulary learning strategies more frequently than their low proficiency students counterparts in all categories: determination (Mean= 3.33, Std. Deviation= .533), social (Mean= 3.00, Std. Deviation= .630), memory (Mean= 3.12, Std. Deviation= .560), cognitive (Mean= 2.99, Std. Deviation= .752), and metacognitive (Mean= 3.02, Std. Deviation= .909).

The results of independent samples t-test in Table 4.34 show a statistically significant difference between high proficiency students and low proficiency students in the use of determination strategies ($t = 7.606$, $df = 648.100$, $p < .001$) and metacognitive strategies ($t = 6.235$, $df = 508.644$, $p < .001$). However, no significant differences were found in employing social strategies ($p > .167$), memory strategies ($p > .062$), and cognitive strategies ($p > .229$).

4.5.4 Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Language Proficiency

This section shows the interviews results of using vocabulary learning strategies in the five main categories in relation to language proficiency. Table 4.35 demonstrates the differences between high proficiency students and low proficiency students in using vocabulary learning strategies.

Table 4.35: Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Language Proficiency

Category	Language Proficiency	No. of Students	Percentage	Pattern of Variation
Determination	High (n=20)	20	100 percent	High=Low
	Low (n=20)	20	100 percent	
Social	High (n=20)	20	100 percent	High=Low
	Low (n=20)	20	100 percent	
Memory	High (n=20)	20	100 percent	High=Low
	Low (n=20)	20	100 percent	
Cognitive	High (n=20)	20	100 percent	High>Low
	Low (n=20)	8	40 percent	
Metacognitive	High (n=20)	19	95 percent	High>Low
	Low (n=20)	1	5 percent	

Table 4.35 above shows no significant differences in using vocabulary learning strategies in three categories: determination, social, and memory. High proficiency students used cognitive and metacognitive strategies more frequently than did low proficiency counterparts. Unlike the quantitative results, interview findings reported significant differences in using vocabulary learning strategies in only two categories (cognitive and metacognitive). The next section illustrates the variances in using vocabulary learning strategies in the five main categories according to academic major.

4.5.5 Variation in Students' Strategy Use in the Five Main Categories According to Academic Major

Based on the results obtained from the analysis of variance (ANOVA), Table 4.36 below demonstrates the variations of students' use of vocabulary learning strategies in the five main categories: DET, SOC, MEM, COG, and MET according to academic major.

Table 4.36: Variation of Students' Use of VLSs in the Five Main Categories According to Academic Major

Category	Academic Major	Mean	Standard Deviation	Significance Level	Level of Use
Determination	Medicine (n=205)	3.02	.563	.010	Medium
	Engineering (n=291)	3.16	.611		Medium
	Agriculture (n=242)	3.19	.658		Medium
Social	Medicine (n=205)	2.99	.585	.408	Medium
	Engineering (n=291)	2.93	.615		Medium
	Agriculture (n=242)	3.01	.767		Medium
Memory	Medicine (n=205)	2.88	.569	.956	Medium
	Engineering (n=291)	2.87	.645		Medium
	Agriculture (n=242)	2.88	.636		Medium
Cognitive	Medicine (n=205)	2.73	.696	.751	Medium
	Engineering (n=291)	2.79	.798		Medium
	Agriculture (n=242)	2.77	.809		Medium
Metacognitive	Medicine (n=205)	2.71	.785	.502	Medium
	Engineering (n=291)	2.77	.871		Medium
	Agriculture (n=242)	2.80	.898		Medium

As demonstrated in Table 4.36 above, agriculture students used VLSs more frequently in four categories (i.e. determination, social, memory, and metacognitive). The mean frequency score of agriculture students in these four categories were: determination (Mean= 3.19, Std. Deviation= .658), social (Mean= 3.01, Std. Deviation= .767), memory (Mean= 2.88, Std. Deviation= .636), and metacognitive (Mean= 2.80, Std. Deviation= .898) respectively. Engineering students used VLSs

more frequently in the cognitive category (Mean= 2.79, Std. Deviation= .798). On the other hand, there were no significant differences in the use of vocabulary learning strategies between students in four main categories: social ($p > .408$), memory ($p > .956$), cognitive ($p > .751$), and metacognitive ($p > .502$). However, there was a significant difference in the students' use of vocabulary learning strategies in the determination category ($p < .010$).

4.5.6 Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Academic Major

Table 4.37 below shows the interviews results obtained from 40 students at JUSTon the use of vocabulary learning strategies in the five main categories according to academic major.

Table 4.37: Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Academic Major

Category	Academic Major	No. of Students	Percentage	Pattern of Variation
Determination	Medicine (n=12)	12	100 percent	Medicine=Engineering=Agriculture
	Engineering (n=16)	16	100 percent	
	Agriculture (n=12)	12	100 percent	
Social	Medicine (n=12)	12	100 percent	Medicine=Engineering=Agriculture
	Engineering (n=16)	16	100 percent	
	Agriculture (n=12)	12	100 percent	
Memory	Medicine (n=12)	12	100 percent	Medicine=Engineering=Agriculture
	Engineering (n=16)	16	100 percent	
	Agriculture (n=12)	12	100 percent	
Cognitive	Medicine (n=12)	8	67 percent	Agriculture>Medicine>Engineering
	Engineering (n=16)	9	63 percent	
	Agriculture (n=12)	10	83 percent	
Metacognitive	Medicine (n=12)	5	42 percent	Agriculture>Engineering>Medicine
	Engineering (n=16)	10	75 percent	
	Agriculture (n=12)	10	83 percent	

As demonstrated in Table 4.37 above, the students from all the majors used determination, social, memory, and metacognitive strategies at the same frequency level. Agriculture students employed cognitive and metacognitive strategies more frequently than their Engineering and Medicine counterparts. Engineering students used metacognitive strategies more frequently than Medicine students while Medicine students surpassed their Engineering peers in using cognitive strategies. The following section focused on the differences of using vocabulary learning strategies in the five main categories in relation to previous VLSs instruction.

4.5.7 Variation in Students' Strategy Use in the Five Main Categories According to Previous VLSs Instruction

Tables 4.38 and 4.39 below show the differences in students' use of vocabulary learning strategies in the five main categories: DET, SOC, MEM, COG, and MET according to previous vocabulary learning strategies instruction.

Table 4.38: Variation of Students' Use of VLSs in the Five Main Categories According to Previous Vocabulary Learning Strategies Instruction

Previous VLSs Instruction		N	Mean	Std. Deviation	Level of Use
Determination	Yes	201	3.32	.51588	Medium
	No	537	3.05	.63572	Medium
Social	Yes	201	3.09	.61274	Medium
	No	537	2.92	.67264	Medium
Memory	Yes	201	3.13	.55819	Medium
	No	537	2.77	.61453	Medium
Cognitive	Yes	201	3.00	.74543	Medium
	No	537	2.67	.76518	Medium
Metacognitive	Yes	201	2.99	.93046	Medium
	No	537	2.68	.81200	Medium

Table 4.39: Independent Samples T- Test of Using VLSs in the Five Main Categories by Previous VLSs Instruction

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Determination	Equal variances assumed	12.517	.000	5.389	736	.000	.26980	.05007	.17151	.36809
	Equal variances not assumed			5.921	439.052	.000	.26980	.04557	.18024	.35936
Social	Equal variances assumed	4.092	.043	3.146	736	.002	.17088	.05432	.06425	.27752
	Equal variances not assumed			3.282	3.282	.001	.17088	.05206	.06853	.27324
Memory	Equal variances assumed	2.814	.094	7.318	736	.000	.36292	.04959	.26556	.46028
	Equal variances not assumed			7.645	392.489	.000	.36292	.04747	.26959	.45625
Cognitive	Equal variances assumed	2.557	.110	5.325	736	.000	.33459	.06283	.21124	.45794
	Equal variances not assumed			5.389	367.534	.000	.33459	.06209	.21250	.45668
Metacognitive	Equal variances assumed	2.990	.084	4.469	736	.000	.31259	.06994	.17528	.44989
	Equal variances not assumed			4.202	320.556	.000	.31259	.07440	.16622	.45896

As illustrated in Tables 4.31, more experienced students used vocabulary learning strategies more frequently than less experienced students in all the categories of VLSs: determination (Mean= 3.32, Std. Deviation= .515), social (Mean= 3.09, Std. Deviation= .612) , memory (Mean= 3.13, Std. Deviation= .558), cognitive (M= 3.00, SD= .745), and metacognitive (Mean= 2.99, Std. Deviation= .930) respectively.

The results of independent samples T-Test in Table 4.32 show a statistically significant difference between more experienced students and less experienced students in the use of determination strategies ($t = 5.921$, $df = 439.052$, $p < .001$) and social strategies ($t = 3.282$, $df = 3.282$, $p < .001$). However, no significant differences were found in employing memory strategies ($p > .094$), cognitive strategies ($p > .110$), and metacognitive strategies ($p > .084$).

4.5.8 Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Previous VLSs Instruction

Table 4.40 reveals the interview results of using vocabulary learning strategies in the five main categories. It also shows the differences in using those strategies according to previous VLSs instruction.

Table 4.40: Interview Results of Variation in Students' Strategy Use in the Five Main Categories According to Previous VLSs Instruction

Category	Previous VLSs Instruction	No. of Students	Percentage	Pattern of Variation
Determination	Yes (n=20)	20	100 percent	More Experienced=Less Experienced
	No (n=20)	20	100 percent	
Social	Yes (n=20)	20	100 percent	More Experienced=Less Experienced
	No (n=20)	20	100 percent	
Memory	Yes (n=20)	20	100 percent	More Experienced=Less Experienced
	No (n=20)	20	100 percent	
Cognitive	Yes (n=20)	18	90 percent	More Experienced>Less Experienced
	No (n=20)	10	50 percent	
Metacognitive	Yes (n=20)	20	100 percent	More Experienced>Less Experienced
	No (n=20)	7	35 percent	

The table above revealed no differences in using vocabulary learning strategies in three categories: determination, social, and memory. However, more experienced students used cognitive and metacognitive strategies more frequently than less experienced students. The interview results contradict with the quantitative findings mentioned earlier in that, more experienced respondents to the questionnaire reported more frequent use of all categories compared to less experienced counterparts. The following section describes the differences in using individual vocabulary learning strategies in relation to four variables (i.e. gender, language proficiency, academic major, and previous VLSs instruction).

4.6 Variations of Individual Vocabulary Learning Strategy Use

The previous sections presents the significant differences in the use of vocabulary learning strategies in relation to five main categories: determination, social, memory, cognitive, and metacognitive. This section reveals the results regarding the significant differences in the students' use of vocabulary learning strategies at the

individual strategy level. The results show the significant variations of individual strategies in relation to four variables: gender, language proficiency, academic major, and previous vocabulary learning strategies instruction.

4.6.1 Variations in Students' Individual Vocabulary Learning Strategies by Gender

As mentioned earlier, female students used vocabulary learning strategies more frequently than their male counterparts. The results are also showed significant differences in the use of determination strategies with preference to female students. The following section shows the significant variations between male and female students in the use of individual vocabulary learning strategies (see Tables 4.41, 4.42).

Table 4.41: Individual VLSs Used More Significantly by Male Students

	Student's Gender	N	Mean	Std. Deviation	Std. Error Mean	Significance level * p < .05, ** p < .01, *** p < .001
Word lists	Male	378	2.61	1.216	.063	.039
	Female	360	2.42	1.262	.067	
Use new words in sentences	Male	378	2.70	1.231	.063	.027
	Female	360	2.50	1.204	.063	
Use English language media (songs, movies)	Male	378	2.78	1.297	.067	.049
	Female	360	2.60	1.267	.067	

Table 4.42: Individual VLSs Used More Significantly by Female Students

	Student's Gender	N	Mean	Std. Deviation	Std. Error Mean	Significance level * p < .05, ** p < .01, *** p < .001
Analyze affixes and roots	Male	378	2.89	1.229	.063	.002
	Female	360	3.17	1.279	.067	
Check for L1 cognate	Male	378	3.23	1.176	.060	.012
	Female	360	3.44	1.077	.057	
Analyze through available pictures or gestures	Male	378	3.37	1.099	.057	.004
	Female	360	3.59	1.075	.057	
Use monolingual dictionary	Male	378	3.28	1.247	.064	.009
	Female	360	3.52	1.271	.067	
Connect the word in its synonyms and antonyms	Male	378	3.07	1.286	.066	.001
	Female	360	3.38	1.142	.060	
Image word form	Male	378	3.01	1.207	.062	.000
	Female	360	3.39	1.240	.065	
Study word with a pictorial representation of its meaning	Male	378	3.11	1.238	.064	.012
	Female	360	3.33	1.115	.059	
Affixes and roots (remembering)	Male	378	2.48	1.258	.065	.021
	Female	360	2.70	1.267	.067	
Use semantic features grids	Male	378	2.63	1.165	.060	.003
	Female	360	2.89	1.173	.062	
Verbal repetition	Male	378	3.29	1.301	.067	.011
	Female	360	3.53	1.228	.065	

As illustrated 4.42, female students used 10 vocabulary learning strategies more significantly than did female students. These strategies refer to the determination category (DET2, DET3, DET4, and DET7), memory category (MEM4, MEM, MEM12, MEM23, and MEM28). Table 4.41 shows that male students reported using three strategies more significantly than their female counterparts. These strategies belong to the determination category (DET8), memory category (MEM20), and metacognitive category (MET2) respectively.

4.6.2 Interview Results of the Variations in Students' Individual VLSs Use by Gender

The interview results shown in the previous section showed that, female students used 40 individual strategies more frequently than male students while male students

employed 19 individual strategies more frequently compared to their female counterparts. The present section describes the differences in the use of individual vocabulary learning strategies as reported through semi-structured interviews with 40 students (see Table 4.43).

Table 4.43: Interview Results of the Variations in Students' Individual VLSs Use by Gender

Category/ Strategy	Gender	No. of Students	Percentage	Pattern of Variation
Determination				
Use Bilingual Dictionary (UBD)	Male (n=20)	20	100 percent	Female=Male
	Female (n=20)	20	100 percent	
Guess Meaning from Context (GMFC)	Male (n=20)	10	50 percent	Female>Male
	Female (n=20)	18	90 percent	
Use Monolingual Dictionary (UMD)	Male (n=20)	10	50 percent	Male>Female
	Female (n=20)	7	35 percent	
Reading Different Materials (RDM)	Male (n=20)	7	35 percent	Female>Male
	Female (n=20)	9	45 percent	
Use Online Dictionary (UOD)	Male (n=20)	5	25 percent	Female>Male
	Female (n=20)	9	45 percent	
Word Lists (WL)	Male (n=20)	4	20 percent	Female>Male
	Female (n=20)	7	35 percent	
Electronic Dictionary (ED)	Male (n=20)	3	15 percent	Female>Male
	Female (n=20)	7	35 percent	
Use Online Resources (UOR)	Male (n=20)	1	5 percent	Female>Male
	Female (n=20)	4	20 percent	
Analyze Part of Speech (APS)	Male (n=20)	2	10 percent	Female>Male
	Female (n=20)	3	15 percent	
Analyze Affixes and Roots (AAR)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	2	10 percent	
Analyze Through Available Pictures or Gestures (ATAPG)	Male (n=20)	2	10 percent	Male>Female
	Female (n=20)	0	0 percent	
Social				
Ask Classmates for Meaning (ACM)	Male (n=20)	18	90 percent	Male>Female
	Female (n=20)	11	55 percent	
Ask Teacher for L1 Translation (ATFLT)	Male (n=20)	7	35 percent	Female>Male
	Female (n=20)	17	85 percent	
Interact with Professional People in English (IPPE)	Male (n=20)	8	40 percent	Female>Male
	Female (n=20)	14	70 percent	
Ask Others (Friends, Siblings, or Relatives) (AOFSR)	Male (n=20)	6	30 percent	Female>Male
	Female (n=20)	14	70 percent	
Interact with Native Speakers (INS)	Male (n=20)	7	35 percent	Male>Female
	Female (n=20)	3	15 percent	
Discover the Meaning Through Group Activity (DMTGA)	Male (n=20)	2	10 percent	Female>Male
	Female (n=20)	8	40 percent	
Ask Teacher for English Synonym (ATES)	Male (n=20)	3	15 percent	Male>Female
	Female (n=20)	1	5 percent	

Ask Teacher for a Sentence Including the New Word (ATSINW)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	2	10 percent	
Teacher Checks Student's Word Lists for Accuracy (TCSWLA)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	2	10 percent	
Memory				
Group Words Together to Study Them (GWTST)	Male (n=20)	14	70 percent	Female>Male
	Female (n=20)	20	100 percent	
Use New Words in Sentences (UNWS)	Male (n=20)	6	30 percent	Female>Male
	Female (n=20)	8	40 percent	
Study the Spelling of Words (SSW)	Male (n=20)	5	25 percent	Female>Male
	Female (n=20)	7	35 percent	
Say New Words Silently When Studying (SNWSWS)	Male (n=20)	7	35 percent	Male>Female
	Female (n=20)	4	20 percent	
Study the Sounds of Words (SSOW)	Male (n=20)	4	20 percent	Female>Male
	Female (n=20)	7	35 percent	
Say New Words Aloud When Studying (SNWAWS)	Male (n=20)	8	40 percent	Male>Female
	Female (n=20)	2	10 percent	
Connect the Words with Synonyms and Antonyms (CWSA)	Male (n=20)	2	10 percent	Female>Male
	Female (n=20)	5	25 percent	
Remember Parts of Speech (RPOS)	Male (n=20)	1	5 percent	Female>Male
	Female (n=20)	3	15 percent	
Group Words with Their English Definitions (GWTED)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	4	20 percent	
Use Keyword Method (UKM)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	1	5 percent	
Associate Words with Arabic Sounds (AWAS)	Male (n=20)	1	5 percent	Male>Female
	Female (n=20)	0	0 percent	
Associate Words with Their Coordinates (AWTC)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	1	5 percent	
Use Physical Actions (UPA)	Male (n=20)	1	5 percent	Male>Female
	Female (n=20)	0	0 percent	
Group Words Within a Storyline (GWWS)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	1	5 percent	
Cognitive				
Keep a Vocabulary Notebook (KVN)	Male (n=20)	5	25 percent	Female>Male
	Female (n=20)	14	70 percent	
Take Notes in Class (TNC)	Male (n=20)	5	25 percent	Female>Male
	Female (n=20)	12	60 percent	
Verbal Repetition (VR)	Male (n=20)	9	45 percent	Female>Male
Written Repetition (WR)	Male (n=20)	3	15 percent	Female>Male
	Female (n=20)	5	25 percent	
Put English Labels on Physical Objects (PELPO)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	2	10 percent	
Listen to Tape of Word Lists (LTWL)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	2	10 percent	
Metacognitive				
Use English Language Media (UELM)	Male (n=20)	9	45 percent	Female>Male
	Female (n=20)	10	50 percent	
Continue to Study Word Overtime (CSWO)	Male (n=20)	3	15 percent	Female>Male
	Female (n=20)	9	45 percent	
Use Spaced Word Practiced, Puzzles, or Exercises (USWP)	Male (n=20)	1	5 percent	Female>Male
	Female (n=20)	3	15 percent	
Skip or Pass New Word (SPNW)	Male (n=20)	1	5 percent	Female>Male
	Female (n=20)	2	10 percent	
Self-Test (ST)	Male (n=20)	0	0 percent	Female>Male
	Female (n=20)	1	5 percent	

The interview results in table 4.43 revealed that, female students reported employing 36 out of 45 vocabulary learning strategies more frequently than did male students. These strategies refer to the categories of VLSs: determination= nine, social= six, memory= 10, cognitive= six, and metacognitive= five. Male students used nine vocabulary learning strategies more frequently than did female students. Among these strategies, two were related to the determination category, three to the social category, and four to the memory category. Female and male students reported employing 'bilingual dictionary' at the same frequency level (100percent); this indicates that the students are basically relying on using such strategy when learning new vocabulary.

4.6.3 Variations in Students' Individual VLSs by Language Proficiency

The previous sections revealed significant differences in the overall use of vocabulary learning strategies, and significant differences in the use of determination and metacognitive strategies in relation to language proficiency. The present section presents the significant differences in the use of individual vocabulary learning strategies in relation to language proficiency (see Table 4.44).

Table 4.44: Individual VLSs Used Significantly by Language Proficiency

	Language Proficiency	N	Mean	Std. Deviation	Std. Error Mean	Significance level * p < .05, ** p < .01, *** p < .001
I analyze part of speech	High	274	3.42	1.279	.077	.000
	Low	464	3.02	1.189	.055	
Analyze affixes and roots	High	274	3.48	1.168	.071	.000
	Low	464	2.76	1.239	.058	
Check for L1 cognate	High	274	3.71	.988	.060	.000
	Low	464	3.11	1.155	.054	
Analyze through available pictures or gestures	High	274	3.58	.969	.059	.033
	Low	464	3.41	1.156	.054	

Guess meaning from textual context	High	274	4.04	.887	.054	.000
	Low	464	3.39	1.223	.057	
Use bilingual dictionary	High	274	3.03	1.162	.070	.000
	Low	464	2.69	1.275	.059	
Use monolingual dictionary	High	274	3.67	1.168	.071	.000
	Low	464	3.24	1.291	.060	
Word lists	High	274	2.78	1.329	.080	.000
	Low	464	2.36	1.160	.054	
Flash cards	High	274	2.43	1.268	.077	.000
	Low	464	2.02	1.081	.050	
Ask teacher for L1 translation	High	274	3.45	1.109	.067	.049
	Low	464	3.28	1.246	.058	
Ask teacher for paraphrase or synonym of new word	High	274	3.16	1.120	.068	.000
	Low	464	2.76	1.144	.053	
Ask teacher for a sentence including the new word	High	274	3.06	1.116	.067	.000
	Low	464	2.67	1.174	.055	
Ask classmates for meaning	High	274	3.57	1.108	.067	.002
	Low	464	3.29	1.208	.056	
Discover new meaning through group work activity	High	274	2.95	1.247	.075	.020
	Low	464	2.74	1.192	.055	
Study and practice meaning in group	High	274	2.99	1.240	.075	.000
	Low	464	2.61	1.139	.053	
Teacher checks students flash cards or word lists for accuracy	High	274	2.50	1.223	.074	.000
	Low	464	2.16	1.151	.053	
Interact with native speakers	High	274	3.28	1.342	.081	.001
	Low	464	2.95	1.342	.062	
Connect word to previous personal experience	High	274	3.27	1.160	.070	.000
	Low	464	3.01	1.257	.058	
Use semantic maps	High	274	3.34	1.176	.071	.003
	Low	464	3.06	1.266	.059	
Associate the word with its coordinates	High	274	3.40	1.099	.066	.000
	Low	464	2.83	1.125	.052	
Connect the word in its synonyms and antonyms	High	274	3.61	1.064	.064	.000
	Low	464	2.99	1.258	.058	
Image word form	High	274	3.53	1.165	.070	.000
	Low	464	3.00	1.237	.057	
Image word's meaning	High	274	3.41	1.145	.069	.000
	Low	464	2.92	1.230	.057	
Use keyword method	High	274	3.06	1.175	.071	.040
	Low	464	2.86	1.333	.062	
Group words together to study them	High	274	3.30	1.131	.068	.000
	Low	464	2.79	1.171	.054	
Study the spelling of a word	High	274	3.67	1.165	.070	.000
	Low	464	3.04	1.246	.058	
Say new word aloud when studying	High	274	3.61	1.179	.071	.000
	Low	464	3.15	1.315	.061	
Use physical action when learning a word	High	274	3.05	1.236	.075	.008
	Low	464	2.80	1.317	.061	
Study word with a pictorial representation of its meaning	High	274	3.43	1.118	.068	.000
	Low	464	3.10	1.206	.056	

Associate the word with its coordinates (phonetically)	High	274	3.43	1.118	.068	.000
	Low	464	2.94	1.185	.055	
Use scales for gradable adjectives	High	274	2.67	1.153	.070	.000
	Low	464	2.32	1.196	.056	
Peg method	High	274	2.58	1.288	.078	.000
	Low	464	2.24	1.144	.053	
Loci method	High	274	2.77	1.217	.074	.000
	Low	464	2.20	1.184	.055	
Group words spatially on a page	High	274	2.83	1.220	.074	.000
	Low	464	2.20	1.148	.053	
Study the sound of a word	High	274	2.97	1.224	.074	.000
	Low	464	2.33	1.121	.052	
Group words together within a storyline	High	274	2.48	1.193	.072	.000
	Low	464	2.08	1.147	.053	
Use new words in sentences	High	274	2.95	1.208	.073	.000
	Low	464	2.40	1.182	.055	
Underline initial letter of the word	High	274	2.80	1.315	.079	.000
	Low	464	2.14	1.137	.053	
Configuration	High	274	2.70	1.331	.080	.000
	Low	464	2.22	1.258	.058	
Affixes and roots (remembering)	High	274	2.83	1.305	.079	.000
	Low	464	2.44	1.221	.057	
Part of speech (remembering)	High	274	3.26	1.227	.074	.000
	Low	464	2.52	1.148	.053	
Paraphrase the word's meaning	High	274	3.38	1.107	.067	.000
	Low	464	2.69	1.165	.054	
Use cognates in study	High	274	3.47	1.100	.066	.000
	Low	464	2.76	1.176	.055	
Learn the word of an idiom together	High	274	2.76	1.208	.073	.000
	Low	464	2.40	1.195	.055	
Use semantic features grids	High	274	3.16	1.120	.068	.000
	Low	464	2.52	1.144	.053	
Verbal repetition	High	274	3.76	1.132	.068	.000
	Low	464	3.20	1.304	.061	
Written repetition	High	274	3.53	1.168	.071	.000
	Low	464	3.15	1.317	.061	
Word lists	High	274	2.97	1.224	.074	.009
	Low	464	2.72	1.290	.060	
Put English labels on physical objects	High	274	2.59	1.244	.075	.004
	Low	464	2.32	1.217	.056	
Keep a vocabulary notebook	High	274	3.11	1.261	.076	.000
	Low	464	2.61	1.286	.060	
Flash cards	High	274	2.83	1.348	.081	.000
	Low	464	2.40	1.299	.060	
Take notes in class	High	274	3.20	1.345	.081	.000
	Low	464	2.61	1.317	.061	
Use the vocabulary section in your textbook	High	274	3.04	1.245	.075	.000
	Low	464	2.64	1.206	.056	

Listen to tape of word lists	High	274	2.82	1.268	.077	.000
	Low	464	2.35	1.268	.059	
Testing oneself with word lists	High	274	2.91	1.233	.074	.000
	Low	464	2.39	1.242	.058	
Use English language media (song, movies)	High	274	2.99	1.272	.077	.000
	Low	464	2.52	1.262	.059	
Skip or pass new word	High	274	3.01	1.272	.077	.000
	Low	464	2.59	1.187	.055	
Use spaced word practiced	High	274	2.67	1.226	.074	.001
	Low	464	2.37	1.036	.048	
Continue to study word overtime	High	274	2.87	1.205	.073	.000
	Low	464	2.45	1.104	.051	
Use cognates in study	High	274	3.47	1.100	.066	.000
	Low	464	2.76	1.176	.055	
Learn the word of an idiom together	High	274	2.76	1.208	.073	.000
	Low	464	2.40	1.195	.055	
Use semantic features grids	High	274	3.16	1.120	.068	.000
	Low	464	2.52	1.144	.053	
Verbal repetition	High	274	3.76	1.132	.068	.000
	Low	464	3.20	1.304	.061	
Written repetition	High	274	3.53	1.168	.071	.000
	Low	464	3.15	1.317	.061	
Word lists	High	274	2.97	1.224	.074	.009
	Low	464	2.72	1.290	.060	
Put English labels on physical objects	High	274	2.59	1.244	.075	.004
	Low	464	2.32	1.217	.056	
Keep a vocabulary notebook	High	274	3.11	1.261	.076	.000
	Low	464	2.61	1.286	.060	
Flash cards	High	274	2.83	1.348	.081	.000
	Low	464	2.40	1.299	.060	
Take notes in class	High	274	3.20	1.345	.081	.000
	Low	464	2.61	1.317	.061	
Use the vocabulary section in your textbook	High	274	3.04	1.245	.075	.000
	Low	464	2.64	1.206	.056	
Listen to tape of word lists	High	274	2.82	1.268	.077	.000
	Low	464	2.35	1.268	.059	
Testing oneself with word lists	High	274	2.91	1.233	.074	.000
	Low	464	2.39	1.242	.058	
Use English language media (song, movies)	High	274	2.99	1.272	.077	.000
	Low	464	2.52	1.262	.059	
Skip or pass new word	High	274	3.01	1.272	.077	.000
	Low	464	2.59	1.187	.055	
Use spaced word practiced	High	274	2.67	1.226	.074	.001
	Low	464	2.37	1.036	.048	
Continue to study word overtime	High	274	2.87	1.205	.073	.000
	Low	464	2.45	1.104	.051	

As revealed in Table 4.44, high proficiency students used all vocabulary learning strategies more significantly than low proficiency students. There were no more frequently or significantly employed strategies reported by low proficiency students. High proficiency students showed a high superiority in using vocabulary learning strategies in the present study.

4.6.4 Interview Results of the Variations in Students' Individual VLSs Use by Language Proficiency

This section illustrates the interview results of the differences of using individual strategies of vocabulary learning in relation to language proficiency (see Table 4.45).

Table 4.45: Interview Results of the Variations in Students' Individual VLSs Use by Language Proficiency

Category/ Strategy	Language Proficiency	No. of Students	Percentage	Pattern of Variation
Determination				
Use Bilingual Dictionary (UBD)	High (n=20)	20	100 percent	High=Low
	Low (n=20)	20	100 percent	
Guess Meaning from Context (GMFC)	High (n=20)	17	85 percent	High>Low
	Low (n=20)	11	55 percent	
Use Monolingual Dictionary (UMD)	High (n=20)	14	70 percent	High>Low
	Low (n=20)	3	15 percent	
Reading Different Materials (RDM)	High (n=20)	11	55 percent	High>Low
	Low (n=20)	5	25 percent	
Use Online Dictionary (UOD)	High (n=20)	10	50 percent	High>Low
	Low (n=20)	4	20 percent	
Word Lists (WL)	High (n=20)	8	40 percent	High>Low
	Low (n=20)	3	15 percent	
Electronic Dictionary (ED)	High (n=20)	2	10 percent	Low>High
	Low (n=20)	8	40 percent	
Use Online Resources (UOR)	High (n=20)	5	20 percent	High>Low
	Low (n=20)	0	0 percent	
Analyze Part of Speech (APS)	High (n=20)	5	25 percent	High>Low
	Low (n=20)	0	0 percent	
Analyze Affixes and Roots (AAR)	High (n=20)	2	10 percent	High>Low
	Low (n=20)	0	0 percent	
Analyze Through Available Pictures or Gestures (ATAPG)	High (n=20)	0	0 percent	Low>High
	Low (n=20)	2	10 percent	

Social					
Ask Classmates for Meaning (ACM)	High (n=20)	17	85 percent	High>Low	
	Low (n=20)	12	60 percent		
Ask Teacher for L1 Translation (ATFLT)	High (n=20)	13	65 percent	High>Low	
	Low (n=20)	11	55 percent		
Interact with Professional People in English (IPPE)	High (n=20)	16	80 percent	High>Low	
	Low (n=20)	6	30 percent		
Ask Others (Friends, Siblings, or Relatives) (AOFSR)	High (n=20)	11	55 percent	High>Low	
	Low (n=20)	9	45 percent		
Interact with Native Speakers (INS)	High (n=20)	8	40 percent	High>Low	
	Low (n=20)	2	10 percent		
Ask Teacher for a Sentence Including the New Word (ATSINW)	High (n=20)	1	5 percent	High=Low	
	Low (n=20)	1	5 percent		
Teacher Checks Student's Word Lists for Accuracy (TCSWLA)	High (n=20)	2	10 percent	High>Low	
	Low (n=20)	0	0 percent		
Memory					
Group Words Together to Study Them (GWTST)	High (n=20)	18	90 percent	High>Low	
	Low (n=20)	16	80 percent		
Use New Words in Sentences (UNWS)	High (n=20)	9	45 percent	High>Low	
	Low (n=20)	5	25 percent		
Study the Spelling of Words (SSW)	High (n=20)	8	40 percent	High>Low	
	Low (n=20)	4	20 percent		
Say New Words Silently When Studying (SNWSWS)	High (n=20)	7	35 percent	High>Low	
	Low (n=20)	4	20 percent		
Study the Sounds of Words (SSOW)	High (n=20)	8	40 percent	High>Low	
	Low (n=20)	3	15 percent		
Say New Words Aloud When Studying (SNWAWS)	High (n=20)	6	30 percent	High>Low	
	Low (n=20)	4	20 percent		
Connect the Words with Synonyms and Antonyms (CWSA)	High (n=20)	6	30 percent	High>Low	
	Low (n=20)	1	5 percent		
Remember Parts of Speech (RPOS)	High (n=20)	4	20 percent	High>Low	
	Low (n=20)	0	0 percent		
Group Words with Their English Definitions (GWTED)	High (n=20)	3	15 percent	High>Low	
	Low (n=20)	1	5 percent		
Use Keyword Method (UKM)	High (n=20)	1	5 percent	High>Low	
	Low (n=20)	0	0 percent		
Associate Words with Arabic Sounds (AWAS)	High (n=20)	1	5 percent	High>Low	
	Low (n=20)	0	0 percent		
Associate Words with Their Coordinates (AWTC)	High (n=20)	1	5 percent	High>Low	
	Low (n=20)	0	0 percent		
Use Physical Actions (UPA)	High (n=20)	0	0 percent	Low>High	
	Low (n=20)	1	5 percent		
Group Words Within a Storyline (GWWS)	High (n=20)	1	5 percent	High>Low	
	Low (n=20)	0	0 percent		

Cognitive					
Keep a Vocabulary Notebook (KVN)	High (n=20)	12	60 percent	High>Low	
	Low (n=20)	7	35 percent		
Take Notes in Class (TNC)	High (n=20)	10	50 percent	High>Low	
	Low (n=20)	7	35 percent		
Verbal Repetition (VR)	High (n=20)	9	45 percent	High>Low	
	Low (n=20)	7	35 percent		
Written Repetition (WR)	High (n=20)	5	25 percent	High>Low	
	Low (n=20)	3	15 percent		
Put English Labels on Physical Objects (PELPO)	High (n=20)	1	5 percent	High=Low	
	Low (n=20)	1	5 percent		
Listen to Tape of Word Lists (LTWL)	High (n=20)	0	0 percent	Low>High	
	Low (n=20)	2	10 percent		
Metacognitive					
Use English Language Media (UELM)	High (n=20)	14	70 percent	High>Low	
	Low (n=20)	5	25 percent		
Continue to Study Word Overtime (CSWO)	High (n=20)	7	35 percent	High>Low	
	Low (n=20)	5	25 percent		
Use Spaced Word Practiced, Puzzles, or Exercises (USWP)	High (n=20)	4	20 percent	High>Low	
	Low (n=20)	0	0 percent		
Skip or Pass New Word (SPNW)	High (n=20)	1	5 percent	Low>High	
	Low (n=20)	2	10 percent		
Self-Test (ST)	High (n=20)	1	5 percent	High>Low	
	Low (n=20)	0	0 percent		

As shown in table 4.45 above, high proficiency students used 37 out of 45 vocabulary learning strategies more frequently than did low proficiency students. These strategies refer to the categories of VLSs: determination= eight, social= eight, memory= 13, cognitive= four, and metacognitive= four. Low proficiency students used five vocabulary learning strategies more frequently than high proficiency students. Among those strategies, two were related to the determination category, two to the memory category, and one to the metacognitive category. Both groups of students reported using three individual strategies at the same frequency level (100percent), these strategies are: 'use bilingual dictionary', 'ask Teacher for a sentence including the new word', and 'put English labels on physical objects'.

4.6.5 Variations in Students' Individual Vocabulary Learning Strategies by Academic Major

In the previous section, it was reported that agriculture students used vocabulary learning strategies more frequently in four main categories: determination, social, memory, and metacognitive. Also, there was a statistically significant difference in the use of determination strategies among agriculture students compared to engineering and medicine students. Engineering students used cognitive strategies more frequently than their medicine and agriculture counterparts. The current section highlights the variations and significant differences in the use of individual vocabulary learning strategies among the students in the three disciplines (see Table 4.46).

Table 4.46: ANOVA Results of Individual VLSs Used Significantly by Academic Major

		N	Mean	Std. Deviation	Std. Error	Significance level * p < .05, ** p < .01, *** p < .001
I analyze part of speech	Medicine	205	2.81	1.178	.082	.000
	Engineering	291	3.27	1.188	.070	
	Agriculture	242	3.35	1.287	.083	
	Total	738	3.17	1.237	.046	
Check for L1 cognate	Medicine	205	3.20	1.048	.073	.008
	Engineering	291	3.29	1.144	.067	
	Agriculture	242	3.51	1.171	.075	
	Total	738	3.33	1.133	.042	
Use monolingual dictionary	Medicine	205	3.23	1.221	.085	.005
	Engineering	291	3.35	1.259	.074	
	Agriculture	242	3.60	1.282	.082	
	Total	738	3.40	1.264	.047	
Ask teacher for paraphrase or synonym of new word	Medicine	205	3.09	1.027	.072	.019
	Engineering	291	2.86	1.185	.069	
	Agriculture	242	2.80	1.192	.077	
	Total	738	2.91	1.150	.042	
Discover new meaning through group work activity	Medicine	205	2.96	1.141	.080	.002
	Engineering	291	2.62	1.140	.067	
	Agriculture	242	2.93	1.334	.086	
	Total	738	2.82	1.216	.045	

Study and practice meaning in group	Medicine	205	2.70	1.118	.078	.008
	Engineering	291	2.63	1.160	.068	
	Agriculture	242	2.94	1.269	.082	
	Total	738	2.75	1.192	.044	
Associate the word with its coordinates	Medicine	205	3.18	1.102	.077	.016
	Engineering	291	2.90	1.173	.069	
	Agriculture	242	3.11	1.140	.073	
	Total	738	3.04	1.148	.042	
Connect the word in its synonyms and antonyms	Medicine	205	3.16	1.128	.079	.010
	Engineering	291	3.10	1.319	.077	
	Agriculture	242	3.41	1.171	.075	
	Total	738	3.22	1.227	.045	
Image word form	Medicine	205	3.13	1.224	.085	.008
	Engineering	291	3.08	1.238	.073	
	Agriculture	242	3.40	1.225	.079	
	Total	738	3.20	1.236	.046	
Use scales for gradable adjectives	Medicine	205	2.38	1.225	.086	.019
	Engineering	291	2.60	1.223	.072	
	Agriculture	242	2.32	1.106	.071	
	Total	738	2.45	1.192	.044	
Loci method	Medicine	205	2.61	1.250	.087	.001
	Engineering	291	2.47	1.213	.071	
	Agriculture	242	2.18	1.190	.077	
	Total	738	2.41	1.227	.045	
Study the sound of a word	Medicine	205	2.78	1.224	.085	.012
	Engineering	291	2.47	1.124	.066	
	Agriculture	242	2.50	1.250	.080	
	Total	738	2.57	1.200	.044	
Underline initial letter of the word	Medicine	205	2.60	1.219	.085	.012
	Engineering	291	2.27	1.228	.072	
	Agriculture	242	2.34	1.273	.082	
	Total	738	2.39	1.246	.046	
Affixes and roots (remembering)	Medicine	205	2.43	1.276	.089	.007
	Engineering	291	2.53	1.210	.071	
	Agriculture	242	2.79	1.302	.084	
	Total	738	2.59	1.266	.047	
Part of speech (remembering)	Medicine	205	2.64	1.191	.083	.016
	Engineering	291	2.76	1.199	.070	
	Agriculture	242	2.97	1.285	.083	
	Total	738	2.79	1.231	.045	
Paraphrase the word's meaning	Medicine	205	2.85	1.134	.079	.013
	Engineering	291	2.87	1.197	.070	
	Agriculture	242	3.13	1.215	.078	
	Total	738	2.95	1.191	.044	

Written repetition	Medicine	205	3.28	1.175	.082	.033
	Engineering	291	3.16	1.366	.080	
	Agriculture	242	3.45	1.232	.079	
	Total	738	3.29	1.276	.047	
Use the vocabulary section in your textbook	Medicine	205	2.95	1.185	.083	.002
	Engineering	291	2.59	1.290	.076	
	Agriculture	242	2.90	1.181	.076	
	Total	738	2.79	1.236	.045	

As displayed in the table above, there were 19 individual VLSs varied significantly according to academic major. Agriculture students used 10 strategies more significantly than medicine and engineering students. These strategies are 'analyze part of speech' ($F = 12.338, p < .001$), 'check for L1 cognate' ($F = 4.858, p < .01$), 'use monolingual dictionary' ($F = 5.319, p < .01$), 'study and practice meaning in group' ($F = 4.814, p < .01$), 'connect the word in its synonyms and antonyms' ($F = 4.606, p < .05$), 'image word form' ($F = 4.897, p < .01$), 'remembering affixes and roots' ($F = 4.977, p < .01$), 'remembering part of speech' ($F = 4.163, p < .05$), 'paraphrase the word's meaning' ($F = 4.333, p < .05$), and 'written repetition' ($F = 3.413, p < .05$).

Medicine students reported statistical significant use of seven strategies compared to agriculture and engineering students. These strategies are namely 'Ask teacher for paraphrase or synonym of new word' ($F = 3.968, p < .05$), 'discover new meaning through group work activity' ($F = 6.523, p < .01$), 'Associate the word with its coordinates' ($F = 4.143, p < .05$), 'loci method' ($F = 7.643, p < .001$), 'Study the sound of a word' ($F = 4.473, p < .05$), 'Underline initial letter of the word' ($F = 4.435, p < .05$), and 'Use the vocabulary section in your textbook' ($F = 6.544, p < .01$). Engineering students reported statistical significant use of two strategies compared to

medicine and agriculture students which are 'use scales for gradable adjectives'(F = 4.011, p < .05), and 'group words together within a storyline'(F = 4.980, p < .01).

4.6.6 Interview Results of the Variations in Students' Individual VLSs Use by Academic Major

Table 4.47 shows the differences in using individual vocabulary learning strategies. The results have been obtained through semi-structured interviews with 40 students at JUST.

Table 4.47: Interview Results of the Variations in Students' Individual VLSs Use by Academic Major

Category/ Strategy Determination	Academic Major	No. of Students	Percentage	Pattern of Variation
Use Bilingual Dictionary (UBD)	Medicine (n=12)	12	100 percent	Medicine=Engineering
	Engineering (n=16)	16	100 percent	=
	Agriculture (n=12)	12	100 percent	Agriculture
Guess Meaning from Context (GMFC)	Medicine (n=12)	9	75 percent	Medicine>Engineering
	Engineering (n=16)	11	69 percent	>
	Agriculture (n=12)	8	67 percent	Agriculture
Use Monolingual Dictionary (UMD)	Medicine (n=12)	8	67 percent	Medicine>Agriculture
	Engineering (n=16)	5	31 percent	>
	Agriculture (n=12)	4	33 percent	Engineering
Reading Different Materials (RDM)	Medicine (n=12)	6	50 percent	Medicine>Engineering
	Engineering (n=16)	6	38 percent	>
	Agriculture (n=12)	4	33 percent	Agriculture
Use Online Dictionary (UOD)	Medicine (n=12)	3	25 percent	Agriculture>Engineering
	Engineering (n=16)	5	31 percent	ng>
	Agriculture (n=12)	6	50 percent	Medicine
Word Lists (WL)	Medicine (n=12)	2	17 percent	Engineering>Agriculture
	Engineering (n=16)	6	38 percent	re>
	Agriculture (n=12)	3	25 percent	Medicine
Electronic Dictionary (ED)	Medicine (n=12)	3	25 percent	Engineering>
	Engineering (n=16)	5	31 percent	Medicine> Agriculture
	Agriculture (n=12)	2	17 percent	
Use Online Resources (UOR)	Medicine (n=12)	4	33 percent	Medicine>Engineering
	Engineering (n=16)	1	6 percent	>
Analyze Part of Speech (APS)	Agriculture (n=12)	0	0 percent	Agriculture
	Medicine (n=12)	1	8 percent	Agriculture>Medicine>
	Engineering (n=16)	1	6 percent	Engineering
Analyze Affixes and Roots (AAR)	Agriculture (n=12)	3	25 percent	
	Medicine (n=12)	1	8 percent	Medicine>Engineering
	Engineering (n=16)	1	6 percent	>
	Agriculture (n=12)	0	0 percent	Agriculture

Analyze Through Available Pictures or Gestures (ATAPG)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	2 0 0	17 percent 0 percent 0 percent	Medicine>Engineering = Agriculture
Social				
Ask Classmates for Meaning (ACM)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	9 13 6	75 percent 81 percent 50 percent	Engineering> Medicine> Agriculture
Ask Teacher for L1 Translation (ATFLT)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	5 11 7	41 percent 69 percent 58 percent	Engineering>Agriculture re> Medicine
Interact with Professional People in English (IPPE)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	4 8 10	33 percent 50 percent 83 percent	Agriculture>Engineering ng> Medicine
Ask Others (Friends, Siblings, or Relatives) (AOFSR)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	6 8 6	50 percent 50 percent 50 percent	Medicine=Engineering = Agriculture
Interact with Native Speakers (INS)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	3 5 2	25 percent 31 percent 17 percent	Engineering> Medicine> Agriculture
Discover the Meaning Through Group Activity (DMTGA)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	6 2 2	50 percent 13 percent 17percent	Medicine>Agriculture> Engineering
Ask Teacher for English Synonym (ATES)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	0 1 3	0 percent 6 percent 25 percent	Agriculture>Engineering ng> Medicine
Ask Teacher for a Sentence Including the New Word (ATSINW)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	0 0 2	0 percent 0 percent 17 percent	Agriculture>Engineering ng= Medicine
Teacher Checks Student's Word Lists for Accuracy (TCSWLA)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	2 0 0	17 percent 0 percent 0 percent	Medicine>Engineering = Agriculture
Memory				
Group Words Together to Study Them (GWTST)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	9 14 11	75 percent 88 percent 92 percent	Agriculture>Engineering ng> Medicine
Use New Words in Sentences (UNWS)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	4 7 3	33 percent 44 percent 25 percent	Engineering> Medicine> Agriculture
Study the Spelling of Words (SSW)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	4 6 2	33 percent 38 percent 17 percent	Engineering> Medicine> Agriculture
Say New Words Silently When Studying (SNWSWS)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	2 3 6	17 percent 19 percent 50 percent	Agriculture>Engineering ng> Medicine
Study the Sounds of Words (SSOW)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	4 2 4	33 percent 13 percent 33 percent	Medicine=Agriculture> Engineering
Say New Words Aloud When Studying (SNWAWS)	Medicine (n=12) Engineering (n=16) Agriculture (n=12)	2 5 3	17 percent 31 percent 25 percent	Engineering>Agriculture re> Medicine

Connect the Words with Synonyms and Antonyms (CWSA)	Medicine (n=12)	2	17 percent	Agriculture>Medicine>Engineering
	Engineering (n=16)	2	13 percent	
	Agriculture (n=12)	3	25 percent	
Remember Parts of Speech (RPOS)	Medicine (n=12)	1	8 percent	Agriculture>Medicine>Engineering
	Engineering (n=16)	1	6 percent	
	Agriculture (n=12)	2	17 percent	
Group Words with Their English Definitions (GWTED)	Medicine (n=12)	2	17 percent	Medicine>Agriculture>Engineering
	Engineering (n=16)	1	6 percent	
	Agriculture (n=12)	1	8 percent	
Use Keyword Method (UKM)	Medicine (n=12)	0	0 percent	Engineering>Medicine=Agriculture
	Engineering (n=16)	1	6 percent	
	Agriculture (n=12)	0	0 percent	
Associate Words with Arabic Sounds (AWAS)	Medicine (n=12)	0	0 percent	Agriculture>Medicine=Engineering
	Engineering (n=16)	0	0 percent	
	Agriculture (n=12)	1	8 percent	
Associate Words with Their Coordinates (AWTC)	Medicine (n=12)	0	0 percent	Agriculture>Medicine=Engineering
	Engineering (n=16)	0	0 percent	
	Agriculture (n=12)	1	8 percent	
Use Physical Actions (UPA)	Medicine (n=12)	0	0 percent	Engineering>Medicine=Agriculture
	Engineering (n=16)	1	6 percent	
	Agriculture (n=12)	0	0 percent	
Group Words Within a Storyline (GWWS)	Medicine (n=12)	1	8 percent	Medicine>Agriculture=Engineering
	Engineering (n=16)	0	0 percent	
	Agriculture (n=12)	0	0 percent	
Cognitive				
Keep a Vocabulary Notebook (KVN)	Medicine (n=12)	5	42 percent	Agriculture>Medicine>Engineering
	Engineering (n=16)	6	38 percent	
	Agriculture (n=12)	8	67 percent	
Take Notes in Class (TNC)	Medicine (n=12)	3	25 percent	Agriculture>Engineering>Medicine
	Engineering (n=16)	7	44 percent	
	Agriculture (n=12)	7	58 percent	
Verbal Repetition (VR)	Medicine (n=12)	3	25 percent	Engineering>Agriculture>Medicine
	Engineering (n=16)	9	56 percent	
	Agriculture (n=12)	4	33 percent	
Written Repetition (WR)	Medicine (n=12)	3	25 percent	Medicine>Engineering=Agriculture
	Engineering (n=16)	3	19 percent	
	Agriculture (n=12)	2	17 percent	
Put English Labels on Physical Objects (PELPO)	Medicine (n=12)	0	0 percent	Agriculture>Engineering>Medicine
	Engineering (n=16)	1	6 percent	
	Agriculture (n=12)	1	8 percent	
Listen to Tape of Word Lists (LTWL)	Medicine (n=12)	1	8 percent	Medicine=Agriculture>Engineering
	Engineering (n=16)	0	0 percent	
	Agriculture (n=12)	1	8 percent	

Metacognitive					
Use English	Medicine (n=12)	4	33 percent	Agriculture>Engineering	
Language Media (UELM)	Engineering (n=16)	6	38 percent	ng> Medicine	
	Agriculture (n=12)	9	75 percent		
Continue to Study Word Overtime (CSWO)	Medicine (n=12)	2	17 percent	Agriculture>Engineering	
	Engineering (n=16)	5	31 percent	ng> Medicine	
Use Spaced Word Practiced, Puzzles, or Exercises (USWP)	Agriculture (n=12)	5	42 percent		
	Medicine (n=12)	0	0 percent	Engineering>Agriculture	
Skip or Pass New Word (SPNW)	Engineering (n=16)	3	19 percent	re> Medicine	
	Agriculture (n=12)	1	17 percent		
Self-Test (ST)	Medicine (n=12)	1	8 percent	Medicine=Agriculture>	
	Engineering (n=16)	1	6 percent	Engineering	
	Agriculture (n=12)	1	8 percent		
	Medicine (n=12)	1	8 percent	Medicine>Engineering	
	Engineering (n=16)	0	0 percent	= Agriculture	
	Agriculture (n=12)	0	0 percent		

As seen in table 4.47 above, medicine students used 12 out of 45 vocabulary learning strategies more frequently than engineering and agriculture students. These strategies refer to the categories of VLSs: determination= six, social= two, memory= two, cognitive= one, and metacognitive= one. Engineering students have also used 12 vocabulary learning strategies more frequently than medicine and agriculture students: determination= two, social= three, memory= five, cognitive= one, and metacognitive= one. Agriculture students employed 16 individual strategies more frequently than medicine and engineering students: determination= two, social= three, memory= six, cognitive= three, and metacognitive= two. On the other hand, the students from the different disciplines used two strategies at the same frequency level: 'use bilingual dictionary' and 'ask others' to discover the meaning of new encountered words.

Medicine and agriculture students used four strategies at the same frequency level: 'study the sound of words', 'listen to tape of word lists', 'skip or pass new word' and 'use keyword method', whereas engineering and agriculture students employed five individual strategies at the same frequency level: 'analyze through available pictures

or gestures', 'teacher checks student's word lists for accuracy', 'group words together within a storyline', 'written repetition', and 'self-test'. Engineering and medicine students shared the same level of frequency in using three strategies: 'ask teacher for a sentence including the new word', 'associate words with Arabic sounds', and 'associate words with their coordinates'.

4.6.7 Variations in Students' Individual VLSs by Previous VLSs Instruction

As revealed in the previous sections, significant differences in the overall use of vocabulary learning strategies, and significant differences in the use of determination and social strategies were found between more experienced and less experienced students. The present section highlights the significant differences in the use of individual vocabulary learning strategies in relation to previous vocabulary learning strategies instruction (see Table 4.48).

Table 4.48: Individual VLSs Used Significantly by Previous VLSs Instruction

	Previous Vocabulary Learning Strategies Instruction	N	Mean	Std. Deviation	Std. Error Mean	Significance level * p < .05, ** p < .01, *** p < .001
I analyze part of speech	Yes	201	3.52	1.229	.087	.000
	No	537	3.04	1.215	.052	
Analyze affixes and roots	Yes	201	3.51	1.149	.081	.000
	No	537	2.85	1.253	.054	
Check for L1 cognate	Yes	201	3.67	1.021	.072	.000
	No	537	3.21	1.148	.050	
Guess meaning from textual context	Yes	201	4.04	.877	.062	.000
	No	537	3.48	1.206	.052	
Use bilingual dictionary	Yes	201	3.00	1.185	.084	.015
	No	537	2.75	1.261	.054	
Use monolingual dictionary	Yes	201	3.67	1.128	.080	.000
	No	537	3.30	1.297	.056	
Word lists	Yes	201	2.79	1.326	.094	.001
	No	537	2.42	1.194	.052	

Flash cards	Yes	201	2.34	1.236	.087	.017
	No	537	2.10	1.139	.049	
Ask teacher for paraphrase or synonym of new word	Yes	201	3.13	1.108	.078	.001
	No	537	2.82	1.155	.050	
Ask teacher for a sentence including the new word	Yes	201	3.04	1.095	.077	.001
	No	537	2.73	1.184	.051	
Ask classmates for meaning	Yes	201	3.56	1.112	.078	.017
	No	537	3.33	1.198	.052	
Study and practice meaning in group	Yes	201	3.03	1.181	.083	.000
	No	537	2.64	1.179	.051	
Teacher checks students flash cards or word lists for accuracy	Yes	201	2.48	1.241	.088	.009
	No	537	2.22	1.162	.050	
Interact with native speakers	Yes	201	3.30	1.312	.093	.004
	No	537	2.98	1.356	.058	
Connect word to previous personal experience	Yes	201	3.31	1.102	.078	.006
	No	537	3.03	1.264	.055	
Use semantic maps	Yes	201	3.37	1.168	.082	.005
	No	537	3.09	1.258	.054	
Associate the word with its coordinates	Yes	201	3.40	1.114	.079	.000
	No	537	2.91	1.132	.049	
Connect the word in its synonyms and antonyms	Yes	201	3.63	1.075	.076	.000
	No	537	3.07	1.246	.054	
Image word form	Yes	201	3.50	1.167	.082	.000
	No	537	3.08	1.244	.054	
Image word's meaning	Yes	201	3.44	1.130	.080	.000
	No	537	2.98	1.231	.053	
Use keyword method	Yes	201	3.08	1.159	.082	.049
	No	537	2.88	1.318	.057	
Group words together to study them	Yes	201	3.35	1.104	.078	.000
	No	537	2.84	1.180	.051	
Study the spelling of a word	Yes	201	3.73	1.108	.078	.000
	No	537	3.10	1.263	.054	
Say new word aloud when studying	Yes	201	3.66	1.160	.082	.000
	No	537	3.19	1.307	.056	
Use physical action when learning a word	Yes	201	3.06	1.261	.089	.025
	No	537	2.82	1.300	.056	
Study word with a pictorial representation of its meaning	Yes	201	3.45	1.104	.078	.001
	No	537	3.13	1.202	.052	
Associate the word with its coordinates (phonetically)	Yes	201	3.45	1.118	.079	.000
	No	537	2.99	1.185	.051	
Use scales for gradable adjectives	Yes	201	2.63	1.146	.081	.010
	No	537	2.38	1.202	.052	
Peg method	Yes	201	2.61	1.265	.089	.002
	No	537	2.28	1.177	.051	
Loci method	Yes	201	2.85	1.213	.086	.000
	No	537	2.25	1.193	.051	
Group words spatially on a page	Yes	201	2.84	1.203	.085	.000
	No	537	2.28	1.184	.051	
Study the sound of a word	Yes	201	3.03	1.228	.087	.000
	No	537	2.39	1.143	.049	

Group words together within a storyline	Yes	201	2.51	1.192	.084	.000
	No	537	2.12	1.159	.050	
Use new words in sentences	Yes	201	2.92	1.236	.087	.000
	No	537	2.49	1.196	.052	
Underline initial letter of the word	Yes	201	2.83	1.342	.095	.000
	No	537	2.22	1.167	.050	
Configuration	Yes	201	2.68	1.315	.093	.000
	No	537	2.29	1.288	.056	
Affixes and roots (remembering)	Yes	201	2.87	1.301	.092	.000
	No	537	2.48	1.237	.053	
Part of speech (remembering)	Yes	201	3.33	1.201	.085	.000
	No	537	2.59	1.183	.051	
Paraphrase the word's meaning	Yes	201	3.38	1.103	.078	.000
	No	537	2.79	1.183	.051	
Use cognates in study	Yes	201	3.51	1.132	.080	.000
	No	537	2.85	1.173	.051	
Learn the word of an idiom together	Yes	201	2.78	1.197	.084	.001
	No	537	2.44	1.205	.052	
Use semantic features grids	Yes	201	3.14	1.087	.077	.000
	No	537	2.61	1.176	.051	
Verbal repetition	Yes	201	3.82	1.059	.075	.000
	No	537	3.26	1.311	.057	
Written repetition	Yes	201	3.53	1.162	.082	.001
	No	537	3.20	1.306	.056	
Word lists	Yes	201	3.00	1.214	.086	.012
	No	537	2.75	1.285	.055	
Put English labels on physical objects	Yes	201	2.61	1.221	.086	.013
	No	537	2.35	1.231	.053	
Keep a vocabulary notebook	Yes	201	3.12	1.247	.088	.000
	No	537	2.68	1.297	.056	
Flash cards	Yes	201	2.82	1.335	.094	.001
	No	537	2.47	1.321	.057	
Take notes in class	Yes	201	3.24	1.357	.096	.000
	No	537	2.67	1.326	.057	
Use the vocabulary section in your textbook	Yes	201	3.01	1.229	.087	.003
	No	537	2.71	1.229	.053	
Listen to tape of word lists	Yes	201	2.92	1.252	.088	.000
	No	537	2.38	1.270	.055	
Testing oneself with word lists	Yes	201	2.85	1.225	.086	.001
	No	537	2.48	1.264	.055	
Use English language media (song, movies)	Yes	201	2.97	1.262	.089	.000
	No	537	2.59	1.280	.055	
Skip or pass new word	Yes	201	2.97	1.272	.090	.002
	No	537	2.66	1.211	.052	
Use spaced word practiced	Yes	201	2.63	1.230	.087	.039
	No	537	2.43	1.070	.046	
Continue to study word overtime	Yes	201	2.82	1.237	.087	.002
	No	537	2.53	1.121	.048	

As seen in table 4.48, more experienced students used 56 vocabulary learning strategies more significantly than less experienced students. Also, the results show that more experienced students used all the individual VLSs more frequently than less experienced students. However, three individual strategies did not vary significantly according to the previous VLSs (i.e. analyze through available pictures or gestures, ask teacher for L1 translation, and discover meaning through group work activity). In other words, more experienced students have overtly surpassed less experienced students in using VLSs in the present research.

4.6.8 Interview Results of the Variations in Students' Individual VLSs Use by Previous VLSs Instruction

This section illustrates the interview results of the differences of using individual strategies of vocabulary learning in relation to previous VLSs instruction (see Table 4.49).

Table 4.49: Interview Results of the Variations in Students' Individual VLSs Use by Previous VLSs Instruction

Category/ Strategy	Previous VLSs Instruction	No. of Students	Percentage	Pattern of Variation
Determination				
Use Bilingual Dictionary (UBD)	Yes (n=20)	20	100percent	More=Less
	No (n=20)	20	100percent	
Guess Meaning from Context (GMFC)	Yes (n=20)	18	90percent	More>Less
	No (n=20)	10	50percent	
Use Monolingual Dictionary (UMD)	Yes (n=20)	12	60percent	More>Less
	No (n=20)	5	25percent	
Reading Different Materials (RDM)	Yes (n=20)	10	50percent	More>Less
	No (n=20)	6	30percent	
Use Online Dictionary (UOD)	Yes (n=20)	10	50percent	More>Less
	No (n=20)	4	20percent	
Word Lists (WL)	Yes (n=20)	6	30percent	More>Less
	No (n=20)	5	25percent	
Electronic Dictionary (ED)	Yes (n=20)	5	25percent	More=Less
	No (n=20)	5	25percent	
Use Online Resources (UOR)	Yes (n=20)	3	15percent	More>Less
	No (n=20)	2	10percent	

Analyze Part of Speech (APS)	Yes (n=20)	4	20percent	More>Less
	No (n=20)	1	5percent	
Analyze Affixes and Roots (AAR)	Yes (n=20)	2	10percent	More>Less
	No (n=20)	0	0percent	
Analyze Through Available Pictures or Gestures (ATAPG)	Yes (n=20)	2	10percent	More>Less
	No (n=20)	0	0percent	
Social				
Ask Classmates for Meaning (ACM)	Yes (n=20)	14	70percent	Less>More
	No (n=20)	15	75percent	
Ask Teacher for L1 Translation (ATFLT)	Yes (n=20)	14	70percent	More>Less
	No (n=20)	10	50percent	
Interact with Professional People in English (IPPE)	Yes (n=20)	14	70percent	More>Less
	No (n=20)	8	40percent	
Ask Others (Friends, Siblings, or Relatives) (AOFSR)	Yes (n=20)	11	55percent	More>Less
	No (n=20)	9	45percent	
Interact with Native Speakers (INS)	Yes (n=20)	6	30percent	More>Less
	No (n=20)	4	20percent	
Discover the Meaning Through Group Activity (DMTGA)	Yes (n=20)	6	30percent	More>Less
	No (n=20)	4	20percent	
Ask Teacher for English Synonym (ATES)	Yes (n=20)	2	15percent	More=Less
	No (n=20)	2	5percent	
Ask Teacher for a Sentence Including the New Word (ATSINW)	Yes (n=20)	2	10percent	More>Less
	No (n=20)	0	0percent	
Teacher Checks Student's Word Lists for Accuracy (TCSWLA)	Yes (n=20)	1	5percent	More=Less
	No (n=20)	1	5percent	
Memory				
Group Words Together to Study Them (GWTST)	Yes (n=20)	18	90percent	More>Less
	No (n=20)	16	80percent	
Use New Words in Sentences (UNWS)	Yes (n=20)	8	40percent	More>Less
	No (n=20)	6	30percent	
Study the Spelling of Words (SSW)	Yes (n=20)	7	35percent	More>Less
	No (n=20)	5	25percent	
Say New Words Silently When Studying (SNWSWS)	Yes (n=20)	6	30percent	More>Less
	No (n=20)	5	25percent	
Study the Sounds of Words (SSOW)	Yes (n=20)	7	35percent	More>Less
	No (n=20)	4	20percent	
Say New Words Aloud When Studying (SNWAWS)	Yes (n=20)	6	30percent	More>Less
	No (n=20)	4	20percent	
Connect the Words with Synonyms and Antonyms (CWSA)	Yes (n=20)	4	20percent	More>Less
	No (n=20)	3	15percent	
Remember Parts of Speech (RPOS)	Yes (n=20)	3	15percent	More>Less
	No (n=20)	1	5percent	
Group Words with Their English Definitions (GWTED)	Yes (n=20)	3	15percent	More>Less
	No (n=20)	1	5percent	

Use Keyword Method (UKM)	Yes (n=20)	1	5percent	More>Less
	No (n=20)	0	0percent	
Associate Words with Arabic Sounds (AWAS)	Yes (n=20)	1	5percent	More>Less
	No (n=20)	0	0percent	
Associate Words with Their Coordinates (AWTC)	Yes (n=20)	1	5percent	More>Less
	No (n=20)	0	0percent	
Use Physical Actions (UPA)	Yes (n=20)	1	5percent	More>Less
	No (n=20)	0	0percent	
Group Words Within a Storyline (GWWS)	Yes (n=20)	1	5percent	More>Less
	No (n=20)	0	0percent	
Cognitive				
Keep a Vocabulary Notebook (KVN)	Yes (n=20)	10	50percent	More>Less
	No (n=20)	9	45percent	
Take Notes in Class (TNC)	Yes (n=20)	10	50percent	More>Less
	No (n=20)	7	35percent	
Verbal Repetition (VR)	Yes (n=20)	8	40percent	More=Less
	No (n=20)	8	40percent	
Written Repetition (WR)	Yes (n=20)	6	30percent	More>Less
	No (n=20)	2	10percent	
Put English Labels on Physical Objects (PELPO)	Yes (n=20)	0	0percent	Less>More
	No (n=20)	2	10percent	
Listen to Tape of Word Lists (LTWL)	Yes (n=20)	1	0percent	More=Less
	No (n=20)	1	10percent	
Metacognitive				
Use English Language Media (UELM)	Yes (n=20)	12	60percent	More>Less
	No (n=20)	7	35percent	
Continue to Study Word Overtime (CSWO)	Yes (n=20)	7	35percent	More=Less
	No (n=20)	5	25percent	
Use Spaced Word Practiced, Puzzles, or Exercises (USWP)	Yes (n=20)	3	15percent	More>Less
	No (n=20)	1	5percent	
Skip or Pass New Word (SPNW)	Yes (n=20)	2	10percent	More>Less
	No (n=20)	0	0percent	
Self-Test (ST)	Yes (n=20)	1	5percent	More>Less
	No (n=20)	0	0percent	

As shown in Table 4.49, more experienced students used 36 out of 45 vocabulary learning strategies more frequently than did less experienced students. These strategies refer to the categories of VLSs: determination=nine, social= six, memory= 14, cognitive= three, and metacognitive= four. Less experienced students used two vocabulary learning strategies more frequently than more experienced students (social= one and cognitive= one). Among the above reported strategies, both more and less experienced students employed seven individual strategies at the same frequency level: 'use bilingual dictionary', 'electronic dictionary', 'ask teacher for

English synonym', 'teacher checks student's word lists for accuracy', 'verbal repetition', 'listen to tape of word lists', and 'continue study overtime'.

4.7 Discussion of the Findings for Research Question Number Three

This section is devoted to discuss the findings and results obtained to answer the third question of present research: *Do the vocabulary learning strategies used by JUST students vary across gender, proficiency level, academic major and previous vocabulary learning strategies instruction?* In order to obtain the necessary answers of the previously mentioned research question, independent samples t-test, and one-way ANOVA were performed with overall strategy use, strategy use in the five main categories, and individual strategy use in relation to the four independent variables.

4.7.1 Variations in the VLSs Use and Gender

This research investigated the significant differences in the use of vocabulary learning strategies between male and female students in JUST. The results showed no significant differences in the overall strategy use between male and female students. The overall vocabulary learning strategies use between male and female students at the university level was similar, and the gender variable was not the crucial factor in affecting vocabulary learning strategies. These findings are in accord with the results in (Kim, 1995; Stoffer, 1995; Loucky, 2003; Peng, 2009; Lee and Oxford, 2008; Chang, 2010b).

Nevertheless, the results demonstrated significant differences in the use of determination strategies between male and female students; female students used determination strategies more significantly than their male counterparts. This finding

has been confirmed by Cengizhan (2011) who found significant differences in the use of determination strategies between male and female students among foreign language learners in Turkey. Regarding the use of individual vocabulary learning strategies, female students reported a greater use of individual vocabulary learning strategies compared to male students. Some of the previous research works consistently revealed female preferences to employ a high number of learning strategies than male learners (Kaylani, 1996; Gu, 2002; Lan and Oxford, 2003; Lee and Oxford, 2003; Catalan, 2003; Vrettou, 2009; Chang, 2010b).

There might be possible explanations that gender variances did not significantly affect vocabulary learning strategies in the present research. English language has been significant for Jordanian learners, for both male and female students. Female and male students consider English language as an important element in their career, and their motivations to improve their English lead them to use a variety of vocabulary learning strategies when learning English language.

While there were no significant differences in the overall use of vocabulary learning strategies between male and female students; female students employed determination strategies more significantly than male students and they used the other categories more frequently than their male counterparts. Oxford (1995) indicates that, brain hemisphericity, socialization, and cognitive style may play a vital role in the differences between males and females in learning strategies. Kaylani (1996) attributed the fact that female students were more aware of English language and learning strategies to social reasons; the knowledge of English

language among Jordanian girls increases their employability and marriage qualifications.

Looking at the differences in using individual vocabulary learning strategies, female students employed 40 strategies more frequently than male students, while 19 strategies have been used more frequently by male students compared to their female counterparts. Specifically, female students reported significant differences in the use of 10 individual strategies (DET2, DET3, DET4, DET7, MEM4, MEM5, MEM12, MEM23, MEM28, and COG1). Male students made significant use of three strategies compared to their female counterparts (DET8, MEM20, and MET2). These results are in line with the findings in Gu (2002) and Catalan (2003) in that female students used VLSs more significantly than male students. Vrettou (2009) attributed the superiority of females in using learning strategies to earlier biological maturity, personality development, and motivation to learn English.

4.7.2 Variations in the VLSs Use and Language Proficiency

The present research investigated the relationship between the usage of vocabulary learning strategies and language proficiency. The results revealed that there were significant differences between high proficiency students and low proficiency students in using vocabulary learning strategies. In addition, the results of this study found that high proficiency students used all the individual strategies more frequently than low proficiency students. These findings supported the previous studies in this field (Gu and Johnson, 1996; Wharton, 2000; Su, 2005; Siriwan, 2007; Nemati, 2008).

The results are also illustrated significant variances in the use of determination and metacognitive strategies between high and low proficiency students; proficient students used those categories more significantly than their less proficient students counterparts. These results concur with the prior studies on learning strategies use (Green and Oxford, 1995; Gu and Johnson, 1996; Chou, 2002). These studies indicated that significant differences in the strategy use by the level of proficiency occur when comparing low proficiency group with other groups.

When examining the individual strategies use of Jordanian EFL learners with high and low proficiency in English, all strategies are used more frequently by students with high proficiency level. Previous studies (Ahmed, 1989; Lawson and Hogben, 1996; Kojic-Sabo and Lightbown, 1999; Siriwan, 2007; Nemati, 2008) confirmed the early obtained results by indicating that high proficiency learners use a wider range of strategies and more frequently than low proficiency learners. More specifically, the high proficiency students of the current study reported significant differences in the use of determination strategies which show that proficient student put a great emphasis on contextual clues and they try to guess from contextual context more frequently.

In regard to social strategies, the results revealed that the use of these strategies are significantly related to language proficiency. This finding shows that more successful learners of vocabulary are more aware to be involved in authentic practices as a good way to discover the meaning of new words. It also demonstrates the importance of interaction and asking questions for good language learners to get

the meaning of unknown words, unlike less successful learners who tend to ignore new words (Ahmed, 1989).

Similarly, significant differences were found in the use of memory strategies in relation to language proficiency. One possible reason of this finding is that proficient learners are more likely to use “shallow” and “deeper” mental strategies more frequently compared to less proficient learners (Rubin, 1975). Another possible explanation as suggested by (Ahmed, 1989) is that, successful students pay a considerable attention to spelling, collocation, and semantic relationships between new and learned words. Oxford (1990) attributed this result to the learners’ consciousness to the importance of using these strategies, and the importance of matching between the sounds and spellings of newly learned words.

Concerning the cognitive strategies, the findings are also showed significant variances in employing these strategies according to language proficiency. Lawson and Hogben (1996) emphasize the relationship between repetition strategies and the successful in second or foreign language learning. Gu (2003) points out that employing cognitive strategies is relatively associated to the success in language learning. This study emphasizes the need for less proficient learners to use repetition and other mechanical strategies to help them become successful learner in vocabulary learning.

The use of metacognitive strategies was significantly correlated to the level of students’ proficiency in English. This finding in line with Gu and Johnson (1996) results which demonstrate that employing metacognitive strategies including

regulation, self-attention, and self-initiation are strongly related to language proficiency. According to Sanaoui (1995), more proficient are more likely to adopt structured approach in learning vocabulary. It is obviously shown that high proficient students of this study paid more attention to learn English vocabulary through media and they know how to pay selective attention to words which are the characteristics of good language learners.

Generally, the explanation of why learners differ in their proficiency might be related to individual motivation which is defined by Ellis (1994) as “the effort which learners put into learning an L2 as a result of their need or desire to learn it” (p. 715). A number of scholars (Ellis, 1994; Dornyei, 2003; Saville-Troike, 2006) emphasize the vital role that motivation play in language learning and language achievement as it determines the extent of exposure in learning another language. Therefore, the results of this study suggest that proficient students in this research are more motivated to learn English. They used a wide range of vocabulary learning strategies, which could be an indication on the efforts they made to find opportunities to expose themselves to learning English both inside and outside the classroom.

4.7.3 Variations in the VLSs Use and Academic Major

Along with gender and language proficiency, the present research intends to identify the relationship between the vocabulary learning strategies use in relation to academic major. The findings of this research demonstrated no significant differences in the overall strategy use between students in the three faculties (medicine, engineering, and agriculture). The overall VLSs use between these students was similar, and the academic major factor was not effective in the

vocabulary learning strategies choice in the present research. In spite of the very few studies conducted to explore academic major as a variable affecting the vocabulary learning strategies use, the results of current study are consistent with the findings in Gu (2002) which showed academic major as a less effective factor in relation to the choice of vocabulary learning strategies.

However, the findings showed significant variances in the use of determination strategies between students in the three faculties; agriculture students employed determination strategies more significantly than their engineering and medicine counterparts. This result is partially congruent with the findings in Lunt (2000), Siriwan, (2007), and Bernardo and Gonzalez (2009) who found that the use of vocabulary learning strategies are varied significantly according to academic major. In regard to the use of individual vocabulary learning strategies, agriculture students used 31 out 59 strategies more frequently than other students, followed by medicine students (17 out of 59), and engineering students (11 out of 59 strategies). The results are also showed that agriculture students used 10 strategies more significantly than other students; medicine students reported significant variances in using seven individual strategies, while engineering students showed significant differences in the use of two individual strategies.

A closer look into the individual strategies in the five main categories, agriculture students used four determination strategies more frequently than medicine and engineering students with significant variances in using three strategies (DET1, DET3, and DET7). Medicine students employed one determination strategy more frequently, while engineering students used three strategies more frequently with no

significant differences compared to their agriculture and medicine counterparts. Agriculture and medicine students used one determination strategy (word lists) at the same frequency level. These results suggest that agriculture students are more aware of the importance of determination strategies in getting the meaning of new words. It also suggests that agriculture students put more individual efforts than medicine and engineering students to obtain the unknown words' meanings.

Moving to the social category, the findings revealed that medicine students used four social strategies more frequently than other students with significant variances in using two strategies (SOC2, and SOC5). Agriculture students employed four individual strategies more frequently with significant differences in using one strategy (SOC6). Engineering students did not report any more frequently or significantly strategy use compared to other students in this category. These findings indicate that medicine and agriculture students pay a considerable attention to get the meaning of unknown words through participation, interaction, and cooperation with other people unlike their counterparts from the faculty of engineering.

In addition, the results of one-way ANOVA displayed that agriculture students reported using 12 memory strategies more frequently with significant differences in using six individual strategies (MEM4, MEM5, MEM19, MEM23, MEM24, and MEM25). Medicine students reported using eight individual strategies more frequently with significant variances in employing four strategies (MEM3, MEM16, MEM18, and MEM21). Engineering students used seven memory strategies more frequently with significant variances in using one strategy (MEM14). Agriculture and medicine students used one strategy at the same frequency level (group words

together to study them, MEM8). These results showed that agriculture students are more likely to use strategies which require deeper mental processing unlike other students. Also, these findings suggest that agriculture students are more conscious of the semantic relationships, collocations, word parts, and meaning association.

In respect to the cognitive category, agriculture students employed 4 strategies more frequently with significant variances in using 1 strategy (COG2). Medicine students reported using 2 strategies more frequently with 1 significant difference in using 1 strategy (COG8), while engineering students used 3 strategies more frequently than other students with no significant differences in using those strategies. These findings suggest that agriculture students paid higher attention to the mechanical strategies in learning vocabulary. They also tend to use repetition strategies to recall the previously learned words which might be of great help for them to achieve success in their studies.

Concerning the metacognitive category, agriculture students use all the strategies in this category more frequently than their medicine and engineering counterparts. However, there were no significant differences in using these strategies compared to medicine and engineering students. These results suggest that agriculture students in the present study are more independent and strategic learners compared to other students. It also suggests that agriculture students are more self-directed learners with self-management, self-monitoring, and self-evaluation which all lead to successful language learning.

On the other hand, the significant differences between students in using learning strategies might be related to the nature of academic major and learning style preferences. Cohen (1998) defines learning styles as “general approaches to learning, or the ways learners like or dislike in learning a language” (p.15). Similarly, Reid (1995) points out that student learn in various ways. An example of that-according to her- is that, some students like to learn with their eyes (visual learners); other students like to learn with their ears (auditory learners); some other people prefer to learn by experiences, some learners prefer to learn individually while others like to learn in groups. In other words, students are truly differ in their preferred learning styles which might affect their responses to the methods of teaching, and this can be applied in the use of vocabulary learning strategies (Reid, 1995). As a result, the students from the three disciplines showed a variety of learning styles such as individual learning, participation, and cooperative learning.

4.7.4 Variations in the VLSs Use and Previous VLSs Instruction

The current research has also investigated the previous vocabulary learning strategies instruction as a factor affecting the choice of VLSs. The students who received previous VLSs instruction are determined as ‘more experienced students’, while students who have never received explicit instruction on using VLSs are determined as ‘less experienced students’. In spite of the scarcity of research works conducted to investigate the impact of previous VLSs factor on the VLSs choice, the findings were consistent with the results in Stoffer (1995), and Siriwan (2007).

The findings are also determined that more experienced students used determination and social categories more significantly than less experienced students. These results

concur with the findings in Porte (1988), who claims that significant differences in the use of VLSs are affected by past and present language learning experiences. Regarding the individual VLSs, more experienced students used all strategies more frequently than less experienced students. This finding is in line with the findings in Stoffer (1995), and Siriwan (2007) who found that more experienced students reported a more frequent use of VLSs compared to their less experienced students' peers. However, significant variances were found in the use of 56 out of 59 strategies; the strategies which reported no significant differences were: "analyze through available pictures or gestures (DET4), ask teacher for L1 translation (SOC1), and discover meaning through group work activity (SOC5). The results of the present research suggest that previous VLSs instruction is significantly related to the choice of VLSs.

The earlier obtained results emphasized the importance and crucial role of VLSs instruction in the choice of language learning strategies in general and in vocabulary learning strategies in particular. Nevertheless, a number of researchers (Allen, 1983; McCarthy, 1990; Hedge, 2000, Zhao, 2009) assured the neglect of explicit instruction of VLSs. In Jordan, students do not pay a considerable attention to the importance of words; English language teachers put a great emphasis on the new discoveries in English grammar, and they put less effort to help students learn new words (Obeidat, 2005).

McCarthy (1990) points out that the vocabulary field seems to be the least well-catered and the least systemized for all aspects of foreign language learning such as reading, listening, writing, pronunciation, and speaking. Consequently, the explicit

instruction on vocabulary learning strategies would be a crucial factor that affects students' previous language learning strategies, previous language learning experiences, motivation, and their preferences in using vocabulary learning strategies. The next section will provide a discussion of the qualitative results obtained from 40 students in the three faculties through semi-structured interviews.

4.7.5 Discussion of the Interview Results

This section provides discussions on the interview results obtained earlier in this study. The discussions are related to research question three on the differences in using VLSs across four independent variables (i.e. gender, language proficiency, academic major, and previous VLSs instruction).

The interview results showed that female students used VLSs more frequently than male students. These results agree with the previous studies which found that female students use learning strategies more frequently than males (Oxford and Nyikos, 1989; Lee and Oxford, 2003; Catalan, 2003; Vrettou, 2009; Chang, 2010b). In Jordan, female students are more instrumentally oriented and they use VLSs more often than male students due to social reasons. The knowledge of English among females increases their employability and marriage qualifications (Kaylani, 1996).

Regarding language proficiency variable, the interview data indicated differences in using VLSs according to this factor; high proficiency students employed VLSs more often than their low proficiency students counterparts. Kojic-Sabo and Lightbown (1999) found that "more frequent and elaborate strategy use was associated with higher levels of achievements" (p.176). Gu and Johnson (1996) also concluded that

high proficiency students use more VLSs than lower proficiency students. In other words, the results of current study revealed a correspondence with previous research works in terms of the relationship between VLSs use and language proficiency.

In respect to academic major, the interview results demonstrated that the choice of VLSs varied across disciplines. In this study, agriculture students showed superiority in using VLSs, followed by engineering students, and medicine students. The same findings were obtained in the past studies such as (Ma, 1996; Gu, 2002; Siriwan, 2007; Bernardo and Gonzalez, 2009). These results suggest that students with different learning styles preferences from different academic disciplines are more likely to have variant choice language learning strategy use or vocabulary learning strategy use.

Lastly, the interviews' data illustrated that more experienced students used VLSs more frequently than less experienced students. Based on both quantitative and qualitative results, it seems that prior language learning experience (in this study i.e. previous VLSs instruction) is strongly related to high frequency of strategy use and high language proficiency (Porte, 1988; Stoffer, 1995; Siriwan, 2007). In other words, these results suggest that previous vocabulary learning strategies instruction does contribute to better English language learning, and the choice of VLSs use.

4.8 Results of the Metacognitive Strategies Instruction

The present research is also aimed to examine the influence of metacognitive strategies teaching on the students' use of vocabulary learning strategies. This section provides the findings obtained to answer the fourth research question: *Does*

the teaching of metacognitive strategies influence the learning of vocabulary among JUST students? The results of the questionnaire survey and interviews obtained earlier in this study revealed that students' overall use of metacognitive strategies was very low. It also showed that students rely much on other strategies to get the meaning of unknown words rather than manage their vocabulary learning by their own.

As mentioned earlier, independent samples T-Test was used to analyze the possible variances in vocabulary learning between the two groups participated in the two vocabulary tests. The participants' scores in the vocabulary pre-test were analyzed to check the homogeneity of the two groups in the vocabulary knowledge level. The participants were considered as low proficiency students in English language due to their scores in the English language placement test administered by the university. Tables 4.50, 4.51 reveal the vocabulary pre-test results before the metacognitive strategies instruction.

Table 4.50: Means and Standard Deviation of the Vocabulary Pre-Test

	Student's group	N	Mean	Std. Deviation	Std. Error Mean
TEST	Control	30	.4940	.08406	.01535
	Experimental	30	.5173	.10913	.01992

Table 4.51: Results of the Independent Samples T-test in the Vocabulary Pre-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TEST	Equal variances assumed	2.325	.133	-.928	58	.357	-.02333	.02515	-.07368	.02701
	Equal variances not assumed			-.928	54.452	.358	-.02333	.02515	-.07375	.02708

The independent samples T-Test analysis of the pre-test scores shows no significant differences ($t=-.928$; $p>.05$) between the mean scores of the students in the two groups. In other words, the two groups were homogeneous in terms of vocabulary knowledge at the beginning of instruction process. Subsequently, metacognitive strategies instruction was applied to the experimental group only while the control group did not take part in this phase of the experiment. In order to compare the effect of metacognitive strategies instruction on the students' vocabulary knowledge, both control and experimental group were administered a vocabulary post-test at the end of the instruction process (see Tables 4.52 and 4.53).

Table 4.52: Means and Standard Deviations of the Vocabulary Post-Test

Student's Group		N	Mean	Std. Deviation	Std. Error Mean
TEST	Control	30	.5067	.10996	.02008
	Experimental	30	.5807	.15787	.02882

Table 4.53: Results of the Independent Samples T-test in the Vocabulary Post-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TEST	Equal variances assumed	4.096	.048	-2.107	58	.039	-.07400	.03513	-.14431	-.00369
	Equal variances not assumed			-2.107	51.778	.040	-.07400	.03513	-.14449	-.00351

As shown in table 4.53 above, the results of the independent samples t-test indicated that the mean scores of the experimental group (M= .580) were significantly different ($t=-2.107$; $p<.05$) compared to the control group (M= .506). In other words, the experimental group outperformed the control group in the vocabulary post-test. Therefore, the metacognitive strategies instruction seemed to have contributed to the vocabulary learning improvement of students.

4.9 Discussion of the Findings for Research Question Number Four

This section provides discussions of the results of the experimental design. The comparison between scores in both tests (pre-test and post-test) demonstrated that experimental group has made a significant progress after the explicit instruction on using metacognitive strategies. These findings seem to corroborate with previous research works focused on other types of learning strategies such as mnemonic association (Cohen and Aphek, 1981), keyword semantic (Brown and Perry, 1991), monolingual dictionary (Ronald, 2001), and rote memorization, keyword,

and semantic mapping (Sagarra and Alba, 2006). In addition, the results of experimental design are consistent with the previous studies on strategy training of other language skills such as listening performance (Vandergrift, 2003; Coskun, 2010), and reading comprehension (Ghazal, 2007; Celic and Toptas, 2010).

The results of this study suggest that it may be beneficial to raise the overall strategic awareness among learners by directing students' attention to the various strategies which learners feel comfortable and effective to use. To achieve the aforementioned point, explicit strategy instruction for students might be beneficial. Language teachers should introduce the various learning strategies to students, find out what strategies the learners are already using, help them to monitor the use of strategies based on different tasks, and help them to evaluate the effectiveness of using these strategies (Chamot and O'Malley, 1987).

4.10 Summary

Chapter four has focused on the data analysis and results of vocabulary learning strategies employed by JUST students with the significant differences. Descriptive statistics, frequencies, means, standard deviations, independent sample T-Test, and one way ANOVA were computed to find out the frequency of students' overall strategy use, differences of overall strategy use in the five main categories, overall strategy use in relation to four independent factors: gender, language proficiency, academic major, and previous vocabulary learning strategies instruction. It also attempts to find out the overall individual strategy use in the five main categories in relation to four independent factors: gender, language proficiency, academic

major, and previous vocabulary learning strategies instruction.

The descriptive analysis results of overall strategy use revealed that the subjects employed vocabulary learning strategies at a medium degree of strategy use (Mean=2.90, Std. Deviation=.544). The descriptive results also showed a medium use of each of the five strategy categories: determination (Mean=3.13, Std. Deviation=.616), social (Mean=2.97, Std. Deviation=.660), memory (Mean=2.87, Std. Deviation=.620), cognitive (Mean=2.76, Std. Deviation=.773), and metacognitive (M=2.76, SD=.856). The descriptive statistics also indicated the 10 most frequent strategies based on the students' responses on the VLSs questionnaire. 'Guess meaning from textual context' (Mean=3.63, Std. Deviation=1.153) was the most frequent strategy used by the students, whereas 'flash cards' (Mean=2.17, Std. Deviation=1.170) was the least frequent strategy employed by the participants.

The present study investigated the significant differences in the use of vocabulary learning strategies in relation to four variables: gender, language proficiency, academic major, and previous vocabulary learning strategies instruction. Concerning the students' gender, female students used more vocabulary learning strategies than did their male counterparts. There was no significant difference in the use of VLSs in relation to gender (Significance level=.057). Regarding language proficiency, high proficiency students outperformed low proficiency students in the use of VLSs (Significance level=.000).

In terms of academic major, agriculture students surpassed medicine and

engineering students in the use of VLSs. There was no significant difference in the use of VLSs in relation to academic major (Significance level=.692). In respect of previous vocabulary learning strategies instruction, more experienced students employed more strategies than less experienced students (Significance level=.000). Based on the results obtained from independent sample T-Test and analysis of variance (ANOVA) in the five main categories, significant differences were found in the use of determination strategies in relation to all four variables including gender, language proficiency, academic major, and previous vocabulary learning strategies instruction.

Regarding the use of individual vocabulary learning strategies, female students used 10 vocabulary learning strategies more significantly than did male students namely DET2, DET3, DET4, DET7, MEM4, MEM, MEM12, MEM23, and COG1. High proficiency students used all vocabulary learning strategies more frequently than did low proficiency students. In addition, high proficiency students reported statistically significant differences in using all the individual strategies of vocabulary learning.

In terms of employing individual vocabulary learning strategies in relation to academic major, agriculture students reported statistical significant use of 10 strategies than did medicine and engineering students. Medicine students reported statistical significant use of seven strategies compared to agriculture and engineering students while engineering students reported statistical significant use of two strategies compared to medicine and agriculture students. In relation to previous vocabulary learning strategies instruction, more experienced students

used all vocabulary learning strategies more frequently than did less experienced students. They also reported statistically significant differences in using 56 individual strategies.

Finally, the quantitative data showed that metacognitive strategies instruction has a considerable impact on the students' improvement in vocabulary learning. Experimental group has achieved a significant progress after receiving the metacognitive strategies instruction compared to their control group counterparts. Next chapter is devoted to summarize and discuss the quantitative and qualitative results obtained earlier. It also aims to provide some pedagogical implications, limitations and suggestions for future research works.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The final chapter of this thesis provides a brief review of the respondents' profiles, and reviews the results obtained from the present study. Pedagogical implications of the current study are also provided to give a better understanding of learning strategies, vocabulary learning and teaching in Jordanian EFL context. This chapter ends with making some recommendations for future research works and it provides some concluding remarks to the entire study. The present research aimed at achieving the following objectives:

- 1) To determine the types of vocabulary learning strategies employed by JUST students.
- 2) To determine the level of using vocabulary learning strategies employed among JUST students.
- 3) To identify the variances between students' use of vocabulary learning strategies and four independent variables: gender, proficiency level, academic major, and previous vocabulary learning strategies instruction.
- 4) To examine the influence of metacognitive strategies teaching on the students' use of vocabulary learning strategies.

5.2 Background of the Participants

A total of 738 students participated in this study, with 378 male students and 360 female students. The students were randomly selected from three faculties at JUST (Medicine, Engineering, and Agriculture). Most of the respondents were considered as low proficiency students in English based on their ELPT scores. Also, most of the respondents said that they never received explicit instruction on using vocabulary learning strategies while some of them indicated that they had experiences in using such strategies through special classes conducted for that purpose.

To collect the interview data, 40 students have been randomly selected to participate in the semi-structured interviews sessions, with 20 male students and 20 female students. The students were belong to the faculty of medicine (12 students), faculty of engineering (16 students), and the faculty of agriculture (12 students). Most of the informants were considered as low proficiency students, while 15 students were considered as high proficiency students. Regarding previous VLSs instruction, 30 students indicated that they never received explicit instruction on employing VLSs while 10 students reported prior experiences on using such strategies.

The participants of experimental design were 60 students, 30 in the control group and 30 in the experimental group. The students were belong to the three faculties (Medicine=20, Engineering=20, and Agriculture=20) at Jordan University of Science and Technology. All students were considered as low proficient in English language due to their scores obtained in the English language placement test

conducted by the university at the beginning of the academic year. There were 30 female students and 30 male students in this experiment; the age range of the participants was between 18 and 23 years.

5.3 Review of the Findings

In relation to the research question number one and two in the current research, the respondents show a medium frequency level of strategy use. Also, the students used a medium degree of strategy use in all five main categories of vocabulary learning strategies with preference to determination category, followed by social, memory, metacognitive, and cognitive category. The most frequently used strategy was 'guess meaning from textual context', while the least frequently used strategy was 'using flashcards'.

With regard to the research question number three on the variations of VLSs use according to four variables (gender, language proficiency, academic major, and previous VLSs instruction), the results revealed no significant differences in the use of VLSs and two variables (gender, and academic major), while significant variations were found in the use of VLSs in relation to language proficiency and previous VLSs instruction. Concerning the significant differences in the use of the five main categories of VLSs, significant differences were found in the use of determination category according to gender, the use of determination and metacognitive categories according to language proficiency, the use of determination category according to academic major, and the use of determination and social categories according to previous VLSs instruction.

In relation to the research question number four on the influence of metacognitive strategies instruction on vocabulary learning, the results of pre-test showed no significant differences between the mean scores of the students in the two groups. In other words, the two groups were homogeneous in terms of vocabulary knowledge at the beginning of instruction process. After conducting the metacognitive strategies instruction to the experimental group, the post-test results demonstrated significant differences in the mean scores between control and experimental groups. In other words, the experimental group outperformed the control group in the vocabulary post-test. Therefore, the metacognitive strategies instruction seemed to have contributed to the vocabulary learning improvement of students.

5.4 Pedagogical Implications of the Study

As mentioned earlier in chapter one, the main focus of this study is on vocabulary learning strategies. However, it is believed that it would be beneficial to provide some suggestions and implications for teaching the vocabulary of L2 and training Jordanian EFL learners to employ VLSs. The following pedagogical implications are based on the major results obtained in the present study.

- 1) In light of the results of the current research, Jordanian students at JUST have reported employing various VLSs taking into consideration that VLSs are neglected in Teaching English as a Foreign Language (TEFL). As a result, this study suggests that the TEFL curriculum needs to consider learning strategies explicitly, and in a comprehensive way which could be useful for teachers and learners as well. To achieve this purpose, teachers

need to modify their teaching styles or strategies by showing the VLSs effects on the students' L2 vocabulary learning. Students are also encouraged to go beyond the classroom goal; they should be informed to invest their time in finding opportunities to practice with useful activities outside the classroom.

- 2) A number of previous studies (Schmitt, 1997; Wharton, 2000; Nation, 2001) revealed that second language proficiency is strongly related to vocabulary learning strategies. Thus, language teachers should pay attention to vocabulary learning strategies as a key point to facilitate the students' effective language and vocabulary learning. In order to achieve this purpose, strategy instruction should be implemented into the normal language curriculum. Some models of language learning strategy instruction would be useful for teachers to adopt (e.g. Styles and Strategies Based Instruction (Cohen, 1998), and Cognitive Academic Language Learning Approach (Chamot, 2005). Adopting these models can help students to be more successful, and to develop their own VLSs and apply them efficiently.
- 3) The integration of strategy training into language curriculum can help teachers to overcome their challenging tasks of teaching English; especially in EFL context where students get less opportunity to practice English language compared to ESL context. The strategy instruction can increase the learners' awareness of their preferred learning strategies, and help them to become more independent in meeting their own needs. On the other hand, both teachers and learners should be aware of different learning

strategies and styles through strategy training.

- 4) It is recommended that teachers should be trained in strategy instruction and assessment before they teach students on how to use various strategies efficiently. In addition, they should be trained on how to implement strategy instruction inside their classrooms. For this purpose, the Strategy Based Instruction (SBI) model by Cohen, Weaver, and Li (1998) is worth to be adopted. This model guides teachers to systematically introduce different learning strategies to students; this could improve learners' performance and to use learning strategies more effectively.

5.5 Strength of the Study

The current study has offered the perspective of employing vocabulary learning strategies among Jordanian students at Jordan University of Science and Technology. The present research offered some major contributions in the field of vocabulary learning strategies. Firstly, the present research provides a wide investigation on the types of vocabulary learning strategies used by Jordanian students at three faculties (Medicine, Engineering, and Agriculture). Up to the researcher's knowledge, there are no empirical research works on VLSs conducted with Jordanian students. In addition, the current study provides a broad investigation on the frequency of employing vocabulary learning strategies and its relationship with four independent variables: gender, language proficiency, academic major, and previous vocabulary learning strategies instruction.

Secondly, the present study used both quantitative and qualitative methods in order to elicit the types of vocabulary learning strategies employed by Jordanian

university students. Using these methods in a complementary way might help in providing a clearer picture of the participants' use of various vocabulary learning strategies. It also helps in probing extra information and additional details on the students' use of VLSs.

Thirdly, different types of statistical methods were used in order to analyze the data obtained in the present research work. These statistical methods include frequencies, descriptive analysis, independent samples T-test, and one-way ANOVA. The process of analyzing the data of present study can be a helpful guide for other researchers to apply in analyzing similar types of reported data.

Finally, the present research used a quasi-experimental design to examine the influence of metacognitive strategies instruction on vocabulary learning. A pre-test was used to check the homogeneity of both groups (control and experimental) in vocabulary knowledge, and a post-test was used to find out the effect of instructional process on students' vocabulary learning. Up to the researcher's knowledge, there are no previous studies carried out to examine such a relationship in general, and in the Jordanian context in particular.

5.6 Limitations of the Study

It is hoped that the present investigation has provided some valuable information on the use of various types of vocabulary learning strategies by Jordanian university students. However, it is impossible to judge that this study is without shortcomings. Certain limitations have obviously appeared as follow:

- 1) Students are required to fill in the items of VLSs questionnaire based on their self-report. However, some inconsistent findings were appeared compared with the findings obtained from semi-structured interviews. Caution should be taken into consideration when self-reporting is involved in the research instrument. Instructions have to be understood and followed precisely by the participants to get more accurate data.
- 2) The current research used questionnaire and interviews to elicit students' use of VLSs. These research methods have suffered some limitations which have been taken into consideration when interpreting the results of the present research.
- 3) The questionnaire administered in the present study was based on Schmitt's (1997) taxonomy of VLSs, which is believed to be comprehensive and reliable to be conducted in this investigation. However, other VLSs taxonomies should have been derived and included in the VLSs questionnaire of the present study to offer a wide range of VLSs for students to choose from.
- 4) The results of this study are not meant to generalize the types of vocabulary learning strategies among Jordanian study. It only depicts the preferences of using VLSs among Jordanian students at JUST who belong to only three faculties.

5.7 Recommendations for Future Research Works

In spite of the limitations appeared in this study, the researcher believes that future areas of research into vocabulary learning strategies might be taken into

consideration in the future studies. These areas include the following:

- 1) This study is limited to the context of the northern area of Jordan in general and Jordan University of science and technology in particular. Similar studies need to be carried out within the context of other Jordanian cities and universities to be able to compare their findings with those of the present research.
- 2) The use of two methods in this study (i.e. questionnaire, and interviews) is believed to have provided valid and reliable findings. Nevertheless, other studies need to be conducted to confirm their validity and reliability.
- 3) The present study made use of two methods (quantitative and qualitative) in a complement way; these methods were found useful to probe the learners' preferences in using different VLSs. However, future studies need to include other methods such as classroom observation, and think aloud protocol to get a clearer picture about the preferences of VLSs use.
- 4) This research investigated the frequency use of VLSs and its relationship with four independent variables (gender, language proficiency, academic major, and previous VLSs instruction). Nonetheless, there is a need to a more comprehensive research with a wide range of factors affecting the use of VLSs such as motivation, beliefs, cultural background, and learning styles.
- 5) The current study tends to examine the effectiveness of metacognitive strategies instruction on vocabulary retention. Future studies should further examine such a relationship with higher number of participants, and longer

period of time than ten weeks in order to report more accurate and comprehensive results of the instructional process.

5.8 Concluding Remarks

Based on the findings and discussions of the present study, the following points can be concluded:

- 1) Jordanian university students are medium VLSs users.
- 2) The most preferred VLS category among Jordanian university students is determination category.
- 3) Females are superior to males in the use of VLSs showing affective, biological, and social maturity.
- 4) The higher proficient students, the more frequently learners employ strategies among Jordanian university students.
- 5) Agriculture students are more active users of VLSs than their counterparts from other faculties.
- 6) Remarkably in this study, the more experienced students, the more often learners utilize strategies.
- 7) Significantly, The more trained students, the more frequently students use strategies.

The results of this study presented an in-depth profile of vocabulary learning strategies use by Jordanian university students. The researcher made the best attempt to provide answers to all three research questions by using both quantitative and qualitative data. The results from the present study have provided more insights on how Jordanian university students approach to their L2

vocabulary learning.

The results of experimental design might trigger more research works to explore the effectiveness of various strategy training or strategy instruction models on students' performance in English skills in general, and in vocabulary learning in particular. The studies which prove the effectiveness of strategy training may convince English learners, course book writers, teacher trainers, and curriculum designers to pay attention to the advantages and benefits of strategy training or instruction, and integrate these strategies in their classes, course books, and curricula. Many questions remain. This final chapter concludes the present investigation, yet also begins a new chapter for further research works.

REFERENCES

- Abraham, R. G., and Vann, R. J. (1987). Strategies of two language learners: A case study. In A. L. Wenden and J. Rubin (Eds.), *Learner strategies in language learning* (pp.85-102). Englewood Cliffs, NJ: Prentice-Hall.

- Abu Shmais, W. (2004). The English Language Learning Strategies of An-Najah National University EFL Majors. *Journal of the Islamic University of Gaza*, 12(1), 51-75.
- Ahmed, M.O. (1989). Vocabulary learning strategies. In P.Meara (Ed.) *Beyond Words* (pp.3-14). London: BAAL.
- Akbari, Z. and Tahririan, M. H. (2009). Vocabulary learning strategies in an ESP context: The case of para/medical English in Iran. *Asian EFL Journal*, 11 (1), 39-61.
- Alatis, J., and Strachle, A. (1997). The Universe of English Imperialism, Chauvinism, and Paranoia. *World English 2000*, 1-20.
- Al-Akaloby, S. A. A. (2001). *Teaching and learning vocabulary in Saudi Arabian public schools: An exploratory study of some possible reasons behind students' failure to learn English vocabulary*. Unpublished Doctoral Dissertation, University of Essex, UK.
- Allen, V. (1983). *Techniques in teaching vocabulary*. Oxford: Oxford University Press.
- Alqahtani, M. (2005). *The use of vocabulary learning strategies by EFL learners at three different educational levels*. Unpublished PhD thesis, University of Essex, United Kingdom.
- Alverman, D. E., and Phelps, S. F. (2005). *Content reading and literacy: Succeeding in today's diverse classrooms* (4th ed.). Boston: Allyn and Bacon.
- Anderson, N. J. (1991). Individual differences in strategy use in second language reading and testing. *The Modern Language Journal*, 75, 460–472.
- Anderson, N.J. (2002). The role of metacognition in second language teaching and learning. *ERIC Digest*, 3-4.
- Arani, J. (2004). Issues of learning EMP at university: An analysis of students' perspectives. *Karan's Linguistics Issues*. (Online) Retrieved 26 March, 2010 from <http://www3.telus.net/linguisticsissues/emp>.
- Arnaud, P., and Bejoint, H. (1992). *Vocabulary and Applied Linguistics*. Basingstoke: Macmillan.
- Atay, M., and Ozbulgan, C. (2007) Memory strategy instruction, contextual learning and ESP vocabulary recall. *English for Specific Purposes*, 26, 39-51.
- Bader, Y. (1995). Code-switching to English in Daily conversations in Jordan:

Facto and Attitudes. *Abhath Al-Yarmouk Literature and Linguistics Series*, 13(2), 9-2.

Bailey, K. M. (1990). Teaching diaries in teacher education programs. In J. Richards and D. Nunan (Eds.), *Second language teacher education*. Cambridge: Cambridge University Press.

Bataineh, R. F., and Jaradat M. S. (2005). Jordanian English Teachers' Utilization of and Attitudes towards Instructional Games. *Jordan Journal of Educational Sciences* 1 (1), 115-122.

Bedell, D. A., and Oxford, R. L. (1996). Cross-cultural comparisons of language learning strategies in the People's Republic of China and other countries. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives*. (Technical Report #13) (pp. 47-60). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Center.

Bejoint, H. B., & Moulin, A. (1987). The place of the dictionary in an EFL programme. In A. Cowie (Ed.), *The dictionary and the language learner* (pp.381-392).

Bell, J. (1999). *Doing your research project: A guide for first-time researchers in education and social sciences*. Buckingham: Open University Press.

Benson, M. J. (1991). Attitudes and motivation towards English: a survey of Japanese freshmen. *RELC Journal*, 22(1), 34-48.

Berko, J. (1958) The Child's Learning of English Morphology. *Word* , 14, 150-177.

Bernardo, A., and Gonzalez, H. (2009). Vocabulary Learning Strategies of Filipino College Students across Five Disciplines. *TESOL JOURNAL*, 1, 17-27.

Bialystok, E. (1978). A theoretical model of second language learning. *Language Learning*, 28, 69-83.

Blachowicz, Z., and Fisher, P. (2000). Vocabulary instruction. In M.L. Kamil, P. Mosenthal, P.D. Pearson, and R. Barr (Eds.). *Handbook of reading research* (Vol. 3, pp. 503-523). Mahwah, NJ: Lawrence Erlbaum Associates.

Bloom, L. (1993). *The transition from infancy to language: Acquiring the power of expression*. Cambridge: Cambridge University Press.

Braedo, E. (1997). The social construction of learning. In Gary D. Phye (ed.), *Handbook of academic learning: Construction of knowledge*. San Diego, London: Academic Press, 3-45.

Braxton, M. A. (1999). *Adult ESL language learning strategies: Case studies of*

preferred learning styles and perceived cultural influences in academic learning tasks. Unpublished doctoral dissertation, Ohio State University, Columbus.

- Brink, H. (1996). *Fundamentals of research methodology for health care professionals.* Cape Town: Juta.
- Brown, J. D. (2001). *Using surveys in language programs.* Cambridge: Cambridge University Press.
- Brown, H.D. (2000). First language acquisition. In *Principles of language learning and teaching*(4th ed.) (pp. 20-48). New York: Pearson Education.
- Brown, T.S., and Perry, F. L. Jr. (1991). A Comparison of Three Learning Strategies for ESL Vocabulary Acquisition. *TESOL Quarterly*. 25(4), 655-670.
- Burns, N., and Grove, S. (1993). *Practice of Nursing Research: Conduct, Critique, and Utilization.* Philadelphia: Saunders.
- Cameron, L. (2001). *Teaching languages to young learners.* Cambridge: Cambridge University Press.
- Carson, J. G., and Longhini, A. (2002). Focusing on learning styles and strategies: A diary study in an immersion setting. *Language Learning*, 52, 401-438.
- Carter, R., and McCarthy, M. (1988). *Vocabulary and language teaching.* London: Longman.
- Catalan, R. (2003). Sex differences in L2 vocabulary learning strategies. *International Journal of Applied Linguistics*, 13(1), 54-77.
- Catalan, R.M., and Gallego, M.T. (2010). The receptive vocabulary of English foreign language young learners. *Journal of English studies*, 6, 173-191.
- Çelic, S., and Toptaş, V. (2010). Vocabulary learning strategy use of Turkish EFL learners. *Paper presented at third international ELT conference: telling ELT tales out of school*, Department of English Language Teaching, Faculty of Education, Eastern Mediterranean University, Famagusta, North Cyprus.
- Cengizhan, L. (2011). Vocabulary learning strategies: a case of Edrine Anatolian high school. *Procedia Social and Behavioral Sciences*, 15, 1870-1874.

- Chamot, A. U. (1987). The learning strategies of ESL students. In A. Wenden and J. Rubin (Eds.), *Learner strategies in language learning* (pp. 71-83). Englewood Cliffs, NJ: Prentice-Hall.
- Chamot, A. U., and Kupper, L. (1989). Learning strategies in foreign language instruction. *Foreign Language Annuals*, 22, 13-24.
- Chamot, A., and O'Malley, M. (1987). The cognitive academic language learning approach: A bridge to the mainstream. *TESOL Quarterly*, 21(2), 227-249.
- Chamot, A.U., and Rubin, J. (1994). Comments on Janie Rees-Miller's 'A critical appraisal of learner training: theoretical bases and teaching implications': Two readers react. *TESOL Quarterly*, 28(4), 771-776.
- Chamot, A. U., and El-Dinary, P. B. (1999). Children's learning strategies in language immersion classrooms. *The Modern Language Journal*, 83, 319-338.
- Chamot, A. U. (2005). Issues in language learning strategy research and teaching. *Electronic Journal of Verbal Language and Verbal Behavior*, 1(1), 14-26.
- Chang, C. (2010b). *Language learning strategy profile of English as foreign language learners in Taiwan: A comparative case study*. Crane Publishing
- Chen, M.C. (1998). *The role of individual difference in adults benefits from the mnemonic keyword method for foreign vocabulary learning*. Unpublished Doctoral Dissertation, University of Southern Illinois at Carbondale, USA.
- Chomsky, N. (1966). *Topics in the Theory of Generative Grammar*. The Hague: Mouton.
- Cohen, A. D. (1987). The use of verbal and imagery mnemonics in second language vocabulary learning. *Studies in Second Language Acquisition*, 9, 43-62.
- Cohen, A. D. (1990). *Language learning: Insight for learners, teachers, and researchers*. Boston: Heinle and Heinle.
- Cohen, A. D. (1998). *Strategies in Learning and Using a Second Language*. London, New York: Longman.
- Cohen, A. D., and Apeh, E. (1981). Easifying second language learning. *Studies in Second Language Acquisition*, 3, 221-236.
- Cohen, A. D., and Scott, K. (1996). A synthesis of approaches to assessing language learning strategies. In R. Oxford (Ed.), *Language learning*

strategies around the world: Cross-cultural perspectives (pp. 89-106). Honolulu: University of Hawaii.

- Cohen, A. D., Weaver, S. F., and Li, T. (1998). The impact of strategic-based instruction on speaking a foreign language. In A. Cohen (Ed.), *Strategies in learning and using a second language* (pp. 107–156). London: Longman.
- Cohen, L., and Manion, L. (1994). *Research methods in education*. Routledge: London.
- Cohen, L., and Manion, L. (2002). *Research methods in education*. London: Routledge.
- Cohen, A. D., and Dornyei, Z. (2002). Focus on the language learner: Motivation styles, and strategies. In N. Schmitt (Ed.), *An Introduction to applied linguistics* (pp. 170-190). London, UK: Arnold.
- Cook, V. (2001a). *Second Language Learning and Language Teaching*. Third edition. Oxford: Oxford University Press Inc.
- Cook, V. (2001b). *Second language learning and teaching* (3RD Ed.). London: Arnold.
- Coskun, A. (2010). The effect of metacognitive strategy training on the listening performance of beginner student. *Novitas-ROYAL*, 4(1), 35-50.
- Creswell, J. W. (2003). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Crooker, G., and Schmidt, R. W. (1991). Motivation: reopening the research agenda. *Language Learning*, 41(4): 469-512.
- Cross, K. P., and Steadman, M. H. (1996). *Classroom research: Implementing the scholarship of teaching*. San Francisco: Jossey-Bass.
- Crow, J., and Quigley, J. (1985). A semantic field approach to passive vocabulary acquisition for reading comprehension. *TESOL Quarterly*, 19, 497-513.
- Crystal, D. (1997). *English as a Global Language*, Cambridge: Cambridge University Press.
- Decarrico, J. S. (2001). Vocabulary learning and teaching. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (3rd ed.) (pp. 285-299). Boston: Heinle and Heinle.
- Deneme, S. (2010). Cross-cultural differences in language learning strategy

- preferences: a comparative study. *Language, society, and culture*, 31, 81-89.
- Denscombe, M. (2003). *The good research guides* (2nd ed.). Philadelphia: Open University Press.
- DeVellis, R.F. (1991). *Scale Development: theory and applications* (Applied Social Research Methods Series, *Newbury Park: Sage Publications*, 26.
- Dornyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. Mahwah, New Jersey: Lawrence Erlbaum.
- Dornyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah New Jersey: Lawrence Erlbaum Associates.
- Dreyer, C., and Oxford, R., (1996). Prediction of ESL proficiency among Afrikaans-speakers in South Africa. In: Oxford, R. (Ed.), *Language Learning Strategies around the World: Cross-cultural Perspectives*. Second Language Teaching and Curriculum Center, University of Hawaii, Honolulu.
- Ehrman, M., and Oxford, R. (1989). Effects of sex differences, career choice, and psychological type on adult language learning strategies. *Modern Language Journal*, 73, 1-13.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Ellis, N. (1998). Emergentism, connectionism and language learning. *Language Learning*, 48(4), 631–664.
- Elman, J., Bates, E., Johnson, M., and Karmiloff-Smith, A. (1996). *Rethinking innateness: connectionist perspective on development*, Cambridge, MIT Press.
- Fan, M. Y. (2003). Frequency of use, perceived usefulness, and actual usefulness of second language vocabulary strategies: A study of Hong Kong learners. *The Modern Language Journal*, 87(2), 222-241.
- Flavell, J., H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (ed.), *The Nature of Intelligence*, chapter 12, pp. 231–235. Lawrence Erlbaum Associates, Hillsdale, New Jersey.
- Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. E. Weinert and R. H. Kluwe (Eds.), *Metacognition, , and understanding* (pp. 21-29). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Flower, J. (2000). *Start building your vocabulary*. Hove: Language Teaching.
- Goh C, C, M., & Foong P, K. (1997). Chinese ESL Students' Learning Strategies:

- A Look at Frequency, Proficiency, and Gender. *Hong Kong Journal of Applied Linguistics*, 2(1), 39-53.
- Fontana, A., and Frey, J. H. (1994). Interviewing: The art of science. In N.K. Denzin, and Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 361-376). Thousand Oaks, CA: SAGE.
- Gan, Z. (2004). Attitudes and strategies as predictors of self-directed language learning In an EFL context. *International Journal of Applied Linguistics*, 14(3), 229-411.
- Gardner, R. C. (1985). *Social psychological aspects of language learning: The role of attitudes and motivation*. London, UK: Edward Arnold.
- Gardner, R. C. (2000). Correlation, causation, motivation, and second language acquisition. *Canadian Psychology*, 41, 10-24.
- Gardner, R. (1980). On the validity of affective variables in second language acquisition: conceptual and statistical considerations. *Language Learning*, 30(2), 255-270.
- Gardner, R. (2006). The socio-educational model of second language acquisition: a research paradigm. *EUROSLA Yearbook*, 6, 237–260.
- Gardner, R., and Lambert, W. (1972). *Attitudes and motivations in second language learning*. Rowley, Massachusetts: Newbury House.
- Gardner, R. C., and MacIntyre, P. D. (1991). An instrumental motivation in language study: Who said it isn't effective? *Studies in Second Language Acquisition*, 13(1), 57-72.
- Ghazal, L. (2007). Learning vocabulary in EFL context through vocabulary learning strategies. *Novitas-ROYAL*, 1(2), 84-91.
- Ghee, T., Ismail, H., and Kabilan, M. (2010). Language learning strategies used by MFL students based on genders and achievement groups. *US-China Foreign Language*, 8(1), 50-58.
- Goh, C. M., and Foong, K. P., (1997). Chinese ESL students' learning strategies: A look at frequency, proficiency and gender. *Hong Kong Journal of Applied Linguistics*, 2, 39–53.
- Goh, C. (2008). Metacognitive Instruction for Second Language Listening Development: Theory, Practice and Research Implications. *Regional Language Centre Journal*, 39(2), 188 -213.

- Gray, D. E. (2004). *Doing Research in the Real World*. London: SAGE Publications.
- Green, J., and Oxford, R., (1995). A closer look at learning strategies, L2 proficiency, and gender. *TESOL Quarterly* 29(2), 261–297.
- Greenwood Dictionary of Education (2003). In J. Collins III and N. O'Brien (Eds.). p.375. West Port, CN: Greenwood Press.
- Griffiths, C. (2003a). Patterns of language learning strategy use. *System*, 31, 367-383.
- Gu, P. Y. (2002). Gender, academic major, and vocabulary learning strategies of Chinese EFL learners. *RELC Journal*, 33(1): 35-54.
- Gu, P. Y. (2003). Vocabulary Learning in a Second Language: Person, Task, Context and Strategies. *TESL-EJ*, 7(2).
- Gu, P. Y. (2005). *Learning strategies: Prototypical core and dimensions of variation* (Working paper No: 10). Nanyang Technological University National Institute of Education Centre for Research in Pedagogy and Practice. China.
- Gu, P., and Johnson, R. (1996). Vocabulary learning strategies and language learning outcomes. *Language Learning*, 46(4), 643-679.
- Hamzah, M., Abdullah, S., and Kafipour, R. (2009). Vocabulary Learning Strategies of Iranian Undergraduate EFL Students and its Relation to their Vocabulary Size *European Journal of Social Sciences*, 11(1), 39-50.
- Hairrell, A. (2008). *A two-study investigation of research on vocabulary strategies and their implementation in fourth grade social studies classrooms*. Unpublished PhD thesis, University of Texas, USA.
- Hatch, E., and Brown, C. (1995). *Vocabulary, semantics, and language education*. Cambridge: Cambridge University Press.
- Hazaymeh, O. (2004). The impact of bilingualism on ELT in Jordan. *South Asian Language Review* 14 (1+2), 24-32.
- Hedge, T. (2000). *Teaching and learning in the language classroom*. Oxford: Oxford University Press.
- Hiebert, H., and Kamil, M. (2005). Teaching and Learning Vocabulary. Perspectives and Persistent issues in E. H. Hiebert and M. M. Kamil (eds.) *Teaching and Learning Vocabulary: Bringing Research into Practice*, New Jersey: Lawrence Erlbaum Associates, Inc., 1–23.

- Hilgard, E. (1962). *Introduction to Psychology* (3rd Ed.). New York: Harcourt, Brace and World.
- Hong-Nam., and Leavell, G. (2006). Language learning strategy use of ESL students in an intensive English learning context. *System*, 34, 399-415.
- Horwitz, E. K. (1988). The beliefs about language learning of beginning university foreign language students. *The Modern Language Journal*, 72, 283-294.
- Horwitz, E. K. (2000). It ain't over till it's over: On foreign language anxiety, first language deficits, and the confounding of variables. *The Modern Language Journal*, 84, 256-259.
- Horwitz, E. K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics*, 21, 112-126.
- Horwitz, E. K., Horwitz, M. B., and Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70, 125-132.
- Howitt, D., and Cramer, D. (2000). *An introduction to statistics in psychology: A complete guide for students* (2nd ed.). London: Prentice Hall.
- Intaraprasert, C. (2004). *EST students and vocabulary learning strategies: A preliminary investigation*. Unpublished research, Suranaree University of Technology, NakhonRatchasima, Thailand.
- Ito, H. (2002). A new framework of culture teaching for teaching English as a global language. *RELC Journal*, 33(2), 36-57.
- Jackson, H., and Amvela, E. (2000). *Words, Meaning and Vocabulary: An Introduction to Modern English Lexicology*. London: Cassell.
- Jafar, F. (2008). The Use of English in Internet Communication by Jordanian Students *Al Basaer Journal* 12(2), 9-34.
- Jordan University of Science and Technology. (2010). About us. (online) retrieved February 9, 2010 from <http://www.just.edu.jo/pages/default.aspx>.
- Joppe, M. (2000). *The Research Process*. (Online) Retrieved September 26, 2010 from <http://www.ryerson.ca/~mjoppe/rp.htm>.
- Kachru, Y. (1992). World Englishes. *Language learning and teaching* 142(1).
- Kamil, M. (2003). *Adolescents and literacy: Reading for the 21st century*. Washington, DC: Alliance for Excellent Education.
- Kane, E. (1983). *Doing your own research: Basic descriptive research in the social sciences and humanities*. Dublin: Turoe Press.

- Karahan, F. (2007). Language attitudes of Turkish students towards the English language and its use in Turkish context. *Journal of Arts and Sciences Say, 7* May, 73-87.
- Kaylani, C. (1996). The influence of gender and motivation on EFL learning strategy use in Jordan. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross cultural perspectives* (Technical Report #13) (pp.75-88). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Center.
- Kazamia, V. (2003). *Language learning strategies of Greek adult learners of English: Volumes I and II*. Unpublished PhD dissertation. Department of Linguistics and Phonetics, School of Education, The Language Centre, The University of Leeds.
- Khasawneh, F. (2010). Writing for Academic Purposes: Problems Faced by Arab Postgraduate Students of the College of Business, UUM. *ESP World, 9*(2), 1-23.
- Khwaileh, A. (1995). "A Field Report on the Jordanian needs for English and a proposal for Establishing a Department of English at JUST. "Unpublished Report.
- Kinner, P. R., and Gray, C. D. (2000). *SPSS for windows made simple: Release 10*. East Sussex: Psychology Press.
- Kitajima, R. (2001). The effect of instructional conditions on students' vocabulary retention. *Foreign Language Annals, 34*(5), 482.
- Kojic-Sabo, I., and Lightbown, P. M. (1999). Students' approaches to vocabulary learning and their relationship to success. *The Modern Language Journal, 83*, 176-192.
- Kojima, H., and Yoshikawa, C. (2004). Language learning strategy use by Japanese senior high school students. Retrieved on February 17, 2011, from http://repository.ul.hirosakiu.ac.jp/dspace/bitstream/10129/540/1/AN00211590_91_85.pdf
- Krashen, S., and Terrell, T. (2000). *The natural approach: Language acquisition in the classroom*. New York: Longman.
- Kristiansen, I. (1998). *Tehok kaitaop pimisstr ategi oitaesim erkinä kielet*. Vantaa: WSOY.
- Kudo, Y. (1999). *L2 vocabulary learning strategies. (nflrc network 14) [html document]*. Honolulu: University of Hawai'i. Second Language Teaching and Curriculum Center.
- Lan, R.L (2005). *Language learning strategies profiles of EFL elementary*

- school students In Taiwan*. PhD dissertation, University of Maryland, USA.
- Lancaster, G., Dodd, S. and Williamson, P. (2004). Design and analysis of pilot studies: Recommendations for good practice. *Journal of Evaluation in Clinical Practice*, 10 (2), 307-312.
- Lan, R., and Oxford, R. (2003). Language learning strategies profiles of elementary schools on Taiwan. *IRL*, 41, 339-379.
- Laufer, B. (1989). A factor of difficulty in vocabulary learning: Deceptive transparency, *AILA Review*, 6, 10-20.
- Laufer, B. (1997). The lexical plight in L2 reading. In J. Coady and T. Huckin (Eds.), *Second language acquisition: A rationale for pedagogy* (pp. 20-34). Cambridge: Cambridge University Press.
- Laufer, B. (1998). The development of passive and active vocabulary in a second language: Same or different? *Applied Linguistics*, 16, 307-322.
- Lawson, M. J., and Hogben, D. (1996). The vocabulary-learning strategies of foreign-language students. *Language Learning*, 46 (1), 101-135.
- Lee, K and Oxford, R. (2003). The relationship of school year, sex and proficiency on the use of learning strategies in learning English of Korean junior high school students. *Asian EFL Journal*, September. Retrieved from http://www.asianefljournal.com/sep_03_Ok.pdf.
- Lee, K., and Oxford, R. (2008). Understanding ESL learners' strategy use and strategy awareness. *Asian EFL Journal*, 10 (1), 7-32.
- Lenneberg, E. (1967) *The Biological Foundation of Language*. New York: John Wiley and Sons.
- Lewis, M. (1993). *The lexical approach: The state of ELT and a way forward*. Hove: Language Teaching.
- Levy, Y., and Ellis, J. (2011). A guide for novice researchers on experimental and quasi- experimental studies in information system research. *Interdisciplinary journal of information, knowledge, and management*, 6, 151-161.
- Liao D. (2004). EFL proficiency, gender and language learning strategy use among a group of Chinese technological institute English majors. *ARECLS E-Journal*, 1(5).
- Lifrieri, V. (2005). *A sociological perspective on motivation to learn EFL: The case of esc uelas pluri lingües in Argentina*. M.A thesis, University of Pittsburgh.

- Lightbown, P., and Spada, N. (1999) *How Languages are Learned*. New York: Oxford University Press. Second Edition.
- Lightbown, P., and Spada, N. (2006). *How languages are learned: Third edition*. Oxford: Oxford University Press.
- Littlewood, W. (2001). Students' attitudes to classroom English learning: A cross-cultural study. *Language Teaching Research*, 5(1), 3-28.
- Long, M., and Richards, J. (1997) Series editors' preface. In J. Coady and T. Huckin (Eds.), *Second language vocabulary acquisition: A rationale for pedagogy* (pp. ix-x). Cambridge: Cambridge University Press.
- Loucky, J. P. (2003). Enhancing the learning, teaching and testing of new vocabulary by systematically using a depth of lexical processing scale and a vocabulary learning strategies taxonomy. *Japan Language Testing*.
- Lunt, E. H. (2000). *The learning strategies of adult immigrant learners of English: Quantitative and qualitative perspectives*. Unpublished doctoral dissertation, University of Melbourne, Australia.
- Macaro, E. (2005). Fourteen features of a language learner strategy. Retrieved December 12, 2010, from http://www.crie.org.nz/research_paper/1Emesto_Macaro_WP4.pdf
- MacIntyre, P. D. (1994). Toward a social psychological model of strategy use. *Foreign Language Annals*, 27 (2), 185-195.
- MacIntyre, P. D. (2002). Motivation, anxiety and emotion in second language acquisition. In P. D. Robinson (Ed.), *Individual differences in second language acquisition* (pp. 45-68). Amsterdam, Netherlands: John Benjamins.
- MacIntyre, P. D., and Gardner, R. C. (1991). Investigating language class anxiety using the focused essay technique. *The Modern Language Journal*, 75, 296-304.
- Magogwe, J., and Oliver, R. (2007). The relationship between language learning in Botswana. *System*, 35, 338-352.
- Maley, A. (1986). Series editors' preface. In J. Morgan, and M. Rinvolucri (Eds.), *Vocabulary*. Oxford: Oxford University Press.
- Mangubhai, F. 2006, What do we know about learning and teaching second languages, Implications for teaching, *Asian EFL Journal*, 8(3).
- Marefat, H. (2003). The impact of teaching direct learning strategies on the retention of vocabulary by EFL learners. *The Reading Matrix*, 3 (2): 47-62.

- Martinen, M. (2008). *Vocabulary Learning Strategies Used By Upper Secondary School Students Studying English as a Second Language*. Unpublished Master's Thesis, University of Jyväskylä, Finland.
- McCarthy, M. (1988). *Vocabulary and Language Teaching*. New York: Longman.
- McCarthy, M. (1990). *Vocabulary*. Oxford: Oxford University Press.
- McDonough, S. (1999). *Psychology in foreign language teaching*. George Allen and Unwind: London.
- McLaughlin, B., and Heredia, R. (1996). Information-processing approaches to research on second language acquisition and use. In William C. Ritchie and Ten K. Bhatia (ed.s), *Handbook of second language acquisition*. San Diego: Academic Press, 213-228.
- McMullen, M. (2009). Using language learning strategies to improve the writing skills of Saudi EFL students: Will it really work? *System*, 37, 418-433.
- Meara, P. (1994) Second language acquisition: Lexis. In Asher, R.E. (ed) *The encyclopedia of language and linguistics*. Oxford: Pergamon. Vol. 7. 3276-28.
- Meara, P. (2002) The rediscovery of vocabulary. *Second Language Research*. 18, 4,393-407.
- Merriam, S. B. (1998). *Case study research in education and psychology: A qualitative approach*. San Francisco: Jossey-Bass.
- Midraj, S. (1998). ESL students' attitudes and communicative competence. PhD thesis, Terre Haute, Indiana State University.
- Midraj, S. (2003). Affective factors and ESL learning. In C. Coombe, P. Davidson, and D. Lloyd (Eds.). *Proceedings of the 5th and 6th current trends in English language testing* (pp.19-32). Dubai, UAE: TESOL Arabia.
- Miles, M. B., and Huberman, A. M. (1994). *Qualitative data analysis: A sourcebook of new methods* (2nd ed.). Thousand Oaks, CA: SAGE.
- Ministry of education. (2010). Educational system. (Online) Retrieved February 9, 2010 from <http://www.moe.gov.jo>.
- Ministry of higher education. (2010). Educational system. (Online) Retrieved February 9, 2010 from <http://www.mohe.gov.jo>.
- Mitchell, R., and Myles, F. (1998). *Second language learning theories*. London: Arnold.

- Musa, M.A. (1985). Why don't our students speak English fluently after eight years of study? *Journal of Education* 38, 67-72.
- Naiman, N., Frohlich, M., and Todesco, A. (1975). The good second language learners. *TESL Talk*, 6, 58-76.
- Nandy, M. (1994). *Vocabulary and grammar for G.C.E. 'O' level English*. Singapore: Composite Study Aids.
- Nassaji, H. (2006). The Relationship Between Depth of Vocabulary Knowledge and L2 Learners' Lexical Inferencing Strategy Use and Success. *The Modern Language Journal*, 90, 387-401.
- Nation, P. (1990). *Teaching and learning vocabulary*. Boston: Heinle and Heinle.
- Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nation, P. (2005). Teaching and learning vocabulary. In E. Hinkel (Ed.), *Handbook and research in second language teaching and learning* (pp. 581-595). New Jersey: Lawrence Erlbaum.
- Nemati, A. (2008). Use and Rankings of Vocabulary Learning Strategies by *Indian EFL Learners*. 8(4), 1-11.
- Nisbet, J. and Schucksmith, J. (1986). *Learning strategies*. NY: Routledge.
- Nunan, D. (1988). *Syllabus Design*. Oxford: Oxford University Press.
- Nunan, D. (1992). *Understanding language classroom: A guide for teacher initiated action*. London: Prentice Hall International.
- Nyikos, M., and Oxford, R. (1993). A factor analytic study of language learning strategy use: Interpretation from information processing theory and social psychology. *Modern Language Journal*, 77(1), 11-22.
- Obeidat, M. (2005). Attitudes and Motivation in Language Learning. *Journal of Faculty of Education*, 22, 1-17.
- O'Malley, J. M., Chamot, A. U., Stewner-Manzanares, G., Russo, R. P., and Kupper, L. (1985). Learning strategies used by beginning and intermediate ESL students. *Language Learning*, 35, 21-46.
- O'Malley, J., and Chamot, A. (1990). *Learning strategies in second language acquisition*. New York, NY: Cambridge University Press.
- O'Malley, J. M., and Chamot, A. U. (1995). *Learning Strategies in Second*

Language Acquisition. UK: Cambridge University Press.

- Ooi, D., and Lee, K.S. (1996). Vocabulary teaching: Looking behind the word. *English Language Teaching Journal*, 50 (1), 1-7.
- Oscamp, B. (1977). *Attitudes and opinions*. Englewood Cliffs, N, J: Prentice-Hall.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Boston, MA: Heinle and Heinle Publishers.
- Oxford, R.L. (1996). *Language Learning Strategies Around the World: Cross-cultural Perspectives*. Manoa: University of Hawaii Press.
- Oxford, R. (2001). Language Learning Strategies. In Carter, R. and Nunan, D., editors, *The Cambridge Guide to Speakers of Other Languages*, Cambridge: Cambridge University Press, 166-72.
- Oxford, R. L., and Crookall, D. (1989). Research on language learning strategies: Methods, findings, and instructional issues. *Modern Language Journal*, 73, 404-19.
- Oxford, R., and Ehrman, M. (1995). Adults language learning strategies in an intensive foreign language program in the United States. *System*, 23(4), 359-386.
- Oxford, R., and Nyikos, M. (1989). Variables affecting choice of language learning strategies by university students. *Modern Language Journal*, 73, 291-299.
- Oxford, R., and Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the strategy inventory for language learning (SILL). *System*, 23 (1): 1-23.
- Oxford, R., Cho, Y., Leung, S., and Kim, H-J. (2004). Effect of the presence and difficulty of task on strategy use: An exploratory study. *International Review of Applied Linguistics*, 42(1), 1-47.
- Pakir, A. (1999). Connecting with English in the context of internationalism. *TESOL Quarterly*, 33(1), 103-113.
- Park, Y. (1999). An analysis of interrelationship among language learning strategies. Learning styles and learner variables on university students. *English Teaching*, 54(4), 281-308.
- Peacock, M., and Ho, B. (2003). Student language learning strategies across eight disciplines. *International Journal of Applied Linguistics*, 13(2), 179-200.

- Pemberton, R. (2003). Remembering vocabulary, V4. Hong Kong: Language Center, retrieved <http://lc.ust.hk/~sac/advice/english/vocabulary/V4.htm>
- Peng, S. (2009). English vocabulary learning strategies of senior high school students. Unpublished Master's thesis. Suranaree university, [NakhonRatchasima, Thailand](#).
- Piaget, J. (1983). "Piaget's theory." In P. Mussen (ed). *Handbook of Child Psychology*. 4th edition. Vol. 1. New York: Wiley.
- Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory into Practice*, 41(4), 219-225.
- Polit, D., and Hungler, B. (1993). *Essentials of nursing research: methods, appraisal, and utilization*. Philadelphia: J.B. Lippincott Company.
- Porte, G. (1988). Poor language learners and their strategies for dealing with new vocabulary. *ELT Journal*, 42, 167, 172.
- Prevost, J. (2010). *A Case Study of a Vocabulary Strategy in a High School Class of Special Education Students*. PhD Dissertation, Walden University, USA.
- Punch, K. (2005). *Introduction to social research: Quantitative and qualitative approaches* (2nded.). London: SAGE.
- Qashoa, S. (2006). Motivation among learners of English in the secondary schools in the eastern coast of the UAE. M.A thesis, British University in Dubai.
- Rababah.G. (2003). Communication Problems facing Arab learners of English: A personal perspective. *TEFL Web Journal* 2(1), 15-30.
- Rao, Z. (2006). Understanding Chinese students' use of language learning strategies from cultural and educational perspectives. *Journal of Multicultural and Multicultural Development*, 27(6), 491-508.
- Rasekh, Z. E., and Ranjbary, R. (2003). Metacognitive strategy training for vocabulary learning. *Teaching English as a Second or Foreign Language*, 7 (2): 1-21.
- Read, J. (2000). *Assessing vocabulary*. Cambridge: Cambridge University Press.
- Reid, J. M. (1987). The learning style preferences of ESL students. *TESOL Quarterly*, 21(1), 87-111.
- Reid, J. M. (1995). *Learning styles in the ESL/EFL classroom*. Boston, MA: Heinle and Heinle.

- Riazi, A., and M. Rahimi. 2005. Iranian EFL learners' pattern of language learning strategy use. *Journal of Asia TEFL*, 2, 103-129.
- Richards, J. (1985). *The context of language teaching*. Cambridge: Cambridge University Press.
- Richards, J., and Schmidt, R. (2002). *Longman Dictionary of Language Teaching and Applied Linguistics*. London: Longman.
- Richards, J. C., Platt, J., and Platt, H. (1992). *Language teaching and applied linguistics* (2nd ed.). Essex: Longman.
- Ridley, D.S., Schutz, P.A., Glanz, R.S. and Weinstein, C.E. (1992). Self-regulated learning: the interactive influence of metacognitive awareness and goal-setting. *Journal of Experimental Education* 60(4), 293-306.
- Robson, C. (1993). *Real world research: A resource for social scientist and practitioner-researcher*. Oxford: Blackwell.
- Robson, C. (2002). *Real world research: A resource for social scientist and practitioner-researcher*. Oxford: Blackwell.
- Ronald, J. (2001). *Learning about Learning from Dictionaries*. Retrieved October, 27 from <http://wwwl.harenet.ne.jp>
- Rong, M. (1999). Language learning strategies of a sample of tertiary-level students in the P. R. China. *Guidelines*, 21(1), 1-11.
- Rubin, J. (1975). What the "good language learner" can teach us. *TESOL Quarterly*, 9, 41-51.
- Rubin, J. (1981). Study of cognitive Processes in Second Language Learning. *Applied Linguistics*, 2, 117-31.
- Rubin, J., and Thompson, I. (1994). How to be a more successful language learner: Toward learner autonomy (2nd Ed.). Boston, MA: Heinle and Heinle.
- Rupley, W., Logan, J, and Nichols, W. (1999). Vocabulary instruction in a balanced program. *The Reading Teacher*, 52(4).
- Ruutemets, K. (2005). *Vocabulary learning strategies in learning English as a foreign language*. Unpublished Master's thesis, University of Tartu, Estonia.
- Sadighi, F., and Zarafshan, M.A. (2006). Effects of Attitude and Motivation on the Use of language learning strategies by Iranian EFL university students. *Journal of Social Sciences and Humanities of Shiraz University*, 23(1), 71-80.

- Sagarra, N., and Alba, M. (2006). The key is in the keyword: L2 vocabulary learning Methods with beginning learners of Spanish. *The Modern Language Journal*, 90(2), 228-243.
- Sanaoui, R. (1995). Adult learners Approaches learning vocabulary in second languages. *The Modern Language Journal*, 79 (1), 15 – 28.
- Saville-Troike, M. (2006). *Introducing second language acquisition*. Cambridge: Cambridge University Press.
- Schemeck, R. R. (Ed.) (1988). *Learning strategies and learning styles*. New York, NY: Plenum Press.
- Schlinger, H. (1995). *A behavior analytic view of child development*. New York: Plenum Press.
- Schmidt, R., and Watanabe, Y. (2001). Motivation, strategy use and pedagogical preferences. In Z. Dornyei and R. Schmidt (Eds.), *Motivation and second language acquisition* (pp. 313- 359). Honolulu, HI: University of Hawaii Press.
- Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt and M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp. 77-85). Cambridge: Cambridge University Press.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Schwartz, S. H. (1992). Universals in the content and structure of values: theoretical advances and empirical test in 20 countries. *Advances in Experimental Social Psychology*, 23, 1-65.
- Segler, T. (2001). *Language Vocabulary Acquisition and Learning Strategies in ICALL Environments*. Unpublished PhD proposal. Retrieved August 9, 2011 from: <http://www.dai.ed.ac.uk/homes/thomasse/newprop.pdf>
- Sekaran, U. (2003). *Research Methods for Business: a Skill Building Approach* (4th Ed.). New York: John Wiley and Sons.
- Singleton, D. (1999). *Exploring the Second language Mental Lexicon*. C.U.P.
- Siriwan, M. (2007). *English Vocabulary Learning Strategies Employed By Rajabhat University Students*. Unpublished Doctoral Dissertation, the University of Suranaree, Thailand.
- Si-Xiang, P., and Srikhao, S. (2009). English vocabulary learning strategies of

Miao students in senior high school in China—A pilot study. *US-China Foreign Language*, 7(12), 12-17.

Skinner, B. (1957). *Verbal Behavior*. New York: Appleton-Century-Crofts.

Smith, R. K. (1998). *Building vocabulary for college* (4th Ed.). Boston: Houghton Mifflin.

Sokmen, A. J. (1997). Current trends in teaching second language vocabulary. In N. Schmitt and M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp. 237-257). Cambridge: Cambridge University Press.

Spolsky, B. (1989) Communicative Competence, Language Proficiency, and Beyond. *Applied Linguistics*, 10, 138-156.

Stern, H. H. (1975). What can we learn from the good language learner? *Canadian Modern Language Review*, 58, 555-575.

Stoffer, I. (1995). *University foreign language students' choice of vocabulary learning strategies as related to individual difference variables*. Unpublished Doctoral Dissertation, the University of Alabama, USA.

Straat, V. (1974). Behaviorism and Cognitive theory in the study of language: A neo psycholinguistics. In R.L. Schiefelbusch and L.L. Lloyd (Eds.), *Language perspectives acquisition, retardation and intervention* (pp. 615-646). London: University Park Press.

Strauss, A., and Corbin, J. (1998). *Basic of qualitative research: Techniques and procedures for developing ground theory*(2nded.). Thousand Oaks, California: SAGE.

Sung, H., and Padilla, A. M. (1998). Student motivation, parental attitudes and involvement in the learning of Asian languages in elementary and secondary schools. *The Modern Language Journal*, 82, 205-216.

Su, M. M. (2005). A study of EFL technological and vocational college students' language learning strategies and their self-perceived English proficiency. *Electronic Journal of Foreign Language Teaching*, 2(1), 44-56.

Sy, B. (1994). *Sex differences and language learning strategies*. Paper presented at the Eleventh National Conference on TESOL, Taipei, Taiwan, R.O.C.

Taichi, N. (2000). *The use of vocabulary learning strategies: The case of Japanese EFL learners in two different learning environments*. Unpublished Doctoral Dissertation, University of Essex, UK.

The National Report on Adult Education in Jordan. (2006). *The Sixth International Conference on Adult Education*, Retrieved March 19 from

http://www.unesco.org/fileadmin/MULTIMEDIA/INSTITUTES/UIIL/confin tea/pdf/National_Reports/Arab_States/Jordan.pdf.

- Thompson, I., and Rubin, J. (1996). Can strategy instruction improve listening comprehension? *Foreign Language Annals*, 29(3), 331-342.
- Thornbury, S. (2002). *How to teach vocabulary*. Malaysia: Longman-Pearson Educational.
- Tilfarlıoglu, Y.F., and Bozgeyik, Y. (2012). The Relationship between Vocabulary Learning Strategies Proficiency of English Language Learners. *International Journal of Applied Linguistics and English Literature*, 1(2), 91-101.
- Tsan, S.H. (2008). Analysis of English learning strategies of Taiwanese students at National Taiwan Normal University. *Educational Journal of Thailand*, 2(1)84-94.
- Vacca, R. T., and Vacca, J. A. (2007). *Content area reading: Literacy and learning across the curriculum* (9th ed.). Boston: Allynand Bacon.
- Vandergrift, L. (1997). The comprehension strategies of second language (French) listeners: A descriptive study. *Foreign Language Annals*, 30, 387-409.
- Vandergrift, L. (2003). From prediction through reflection: Guiding students through the process of L2 listening. *Canadian Modern Language Review*, 59, 425-440.
- Victori, M., and Lockhart. (1995). Enhancing meta-cognition in self-directed language learning. *System*, 23, 223–234.
- Vijchulata, B., and Lee, G (1985). A survey of students' motivation for learning English. *RELC Journal*, 16 (1), 68-81.
- Von Tetzchner, S., and Grove, N. (2003). *Augmentative and alternative communication developmental issues*. London: Whurr Publishers.
- Vrettou, A. (2011). *Patterns of language learning strategy use by Greek-speaking young learners of English*. Unpublished PhD thesis: Aristotle University of Thessaloniki.
- Vygotsky, L. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Victori, M., and Lockhart. (1995). Enhancing meta-cognition in self-directed language learning. *System*, 23, 223–234.

- Wahba, E. 1998 Teaching Pronunciation—Why, *Language Teaching Forum* 36, 3- 32.
- Walker, S. (1975). *Learning and reinforcement*. London: Methuen.
- Wallace, M. J. (1982). *Teaching vocabulary*. London: Heinemann Educational Books.
- Wang, L. F. (2004). Challenging the effectiveness of L2 learning strategy studies. *Foreign Language World*, 2, 1-7.
- Weaver, S. F., and Cohen, A. D. (1997). *Strategies-based instruction: A teacher training manual*. Retrieved June, 2010 from: <http://www.niu.edu/LLF/LLS>.
- Weiss, N. A. (1995). *Introductory statistics*. Reading, Mass: Addison-Wesley.
- Wenden, A. (1991). *Learner strategies for learner autonomy*. London: Prentice Hall.
- Wenden, A. (1998). Metacognitive knowledge and language learning. *Applied linguistics*, 19 (4), 515-537.
- Wharton, G. (2000). Language learning strategy use of bilingual foreign language learners in Singapore. *Language Learning*, 50(2), 203-243.
- White, L. (2009). Grammatical theory: Interfaces and L2 knowledge. In William C. Ritchie and Tej K. Bhatia (eds), *The new handbook of second language acquisition*. Bingley: Emerald, 49-68
- Wilkins, D. (1972). *Linguistics in language teaching*. Cambridge: CPU.
- Williams, J. (2006). Combining communication strategies and vocabulary development. *The Internet TESL Journal*, XII (2), February.
- Williams, M., and Burden, R. (1997). *Psychology for language teachers*. Cambridge: Cambridge University Press.
- Yali, G. (2010). L2 Vocabulary Acquisition Through Reading-Incidental Learning and Intentional Learning, *Chinese Journal of Applied Linguistics*, 33(1), 74-93.
- Yang, J. (2004). Meta-cognitive Strategy Training in Listening Class. *Foreign Language Education*, 4, 65-69.
- Yang, M. (2010). *Language Learning Strategies of English as Foreign Language University Students in Korea*. PhD Dissertation, Indiana State University,

Terre Haute, Indiana, USA.

Yang, N. (1996). Effectiveness awareness-raising in language learning strategy instruction. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives*. (Technical Report #13) (pp. 205-210). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Center.

Yang, N. (1999). The relationship between EFL learners' beliefs and learning strategy use. *System*, 27, 515-535.

Zhao, N. (2009). Metacognitive Strategy Training and Vocabulary Learning of Chinese college students. *English language teaching* 2(4), 123-129.

Zughoul, M.R. (2003). Globalization and EFL/ESL pedagogy in the Arab World, *Learning a language* 1(2).

APPENDIX A: THE VLSS QUESTIONNAIRE (ENGLISH VERSION)

Dear Student

This questionnaire is designed about vocabulary learning strategies for the purpose of gathering data for my PhD degree research. Completing the questionnaire below, you will also contribute to my work. When you fill in the questionnaire,

remember that there are no right or wrong answers. What counts is your personal opinion about how you can learn words in English. Therefore, try to answer as honest as you can. Please note that the contents of this form will be used only for the above research and absolutely ANONNOYMOUS. Your co-operation in filling this questionnaire is very much appreciated.

- a) Matric Number:
- b) Academic Major:
- c) Age:
- d) Gender:
- e) Your result in the English entrance exam (Circle one): Pass Fail

f) How long have you been studying English?

- g) Have you ever had any instructions (either by book or instructor) on different strategies to learn English vocabulary? (Circle one) YES NO

The following is a list of vocabulary learning strategies. I would like to know how you actually learn words, not how you might learn them. If you do not use a strategy, please circle number **1 (never, 0%)**. If you use a strategy, please circle one of the numbers, **2 (seldom, 25%)**, **3 (sometimes, 50%)**, **4 (often, 75%)**, **5 (always, 100%)**. Please read all the choices before you make your selection. Could you please circle only one choice and if you want to correct the circling please delete it and circle your best choice clearly.

<i>Item No.</i>	<i>STRATEGY</i>	<i>Never</i>	<i>Seldom</i>	<i>Sometimes</i>	<i>Often</i>	<i>Always</i>
DET 1	I Analyze parts of speech	1	2	3	4	5
DET 2	Analyze affixes and roots	1	2	3	4	5
DET 3	Check for L1 cognate	1	2	3	4	5
DET 4	Analyze through available pictures or gestures	1	2	3	4	5
DET 5	Guess meaning from textual context	1	2	3	4	5
DET 6	Use bilingual dictionary	1	2	3	4	5
DET 7	Use monolingual dictionary	1	2	3	4	5

DET 8	Word lists	1	2	3	4	5
DET 9	Flash cards	1	2	3	4	5
SOC 1	Ask teacher for L1 translation	1	2	3	4	5
SOC 2	Ask teacher for paraphrase or synonym of new word	1	2	3	4	5
SOC 3	Ask teacher for a sentence including the new word	1	2	3	4	5
SOC 4	Ask classmates for meaning	1	2	3	4	5
SOC 5	Discover new meaning through group work activity	1	2	3	4	5
SOC 6	Study and practice meaning in a group	1	2	3	4	5
SOC 7	Teacher checks students flash cards or word lists for accuracy	1	2	3	4	5
SOC 8	Interact with native speakers	1	2	3	4	5
MEM 1	Connect word to a previous personal experience	1	2	3	4	5
MEM 2	Use semantic maps	1	2	3	4	5
MEM 3	Associate the word with its coordinates	1	2	3	4	5
MEM 4	Connect the word in its synonyms and antonyms	1	2	3	4	5
MEM 5	Image word form	1	2	3	4	5
MEM 6	Image word's meaning	1	2	3	4	5
MEM 7	Use keyword method	1	2	3	4	5
MEM 8	Group words together to study them	1	2	3	4	5
MEM 9	Study the spelling of a word	1	2	3	4	5
MEM 10	Say new word aloud when studying	1	2	3	4	5
MEM 11	Use physical action when learning a word	1	2	3	4	5
MEM 12	Study word with a pictorial representation of its meaning	1	2	3	4	5
MEM 13	Associate the word with its coordinates (phonetically)	1	2	3	4	5
MEM 14	Use scales for gradable adjectives	1	2	3	4	5
MEM 15	Peg method	1	2	3	4	5
MEM 16	Loci method	1	2	3	4	5
Item No.	STRATEGY	<i>Never</i>	<i>Seldom</i>	<i>Sometimes</i>	<i>Often</i>	<i>Always</i>
MEM 17	Group words together spatially on a page	1	2	3	4	5
MEM 18	Study the sound of a word	1	2	3	4	5
MEM 19	Groups words together within a storyline	1	2	3	4	5
MEM 20	Use new words in sentences	1	2	3	4	5
MEM 21	Underline initial letter of the word	1	2	3	4	5
MEM 22	Configuration	1	2	3	4	5
MEM 23	Affixes and roots (remembering)	1	2	3	4	5

MEM 24	Part of speech (remembering)	1	2	3	4	5
MEM 25	Paraphrase the word's meaning	1	2	3	4	5
MEM 26	Use cognates in study	1	2	3	4	5
MEM 27	Learn the word of an idiom together	1	2	3	4	5
MEM 28	Use semantic features grids	1	2	3	4	5
COG 1	Verbal repetition	1	2	3	4	5
COG 2	Written repetition	1	2	3	4	5
COG 3	Word lists	1	2	3	4	5
COG 4	Put English labels on physical objects	1	2	3	4	5
COG 5	Keep a vocabulary notebook	1	2	3	4	5
COG 6	Flash cards	1	2	3	4	5
COG 7	Take notes in class	1	2	3	4	5
COG 8	Use the vocabulary section in your textbook	1	2	3	4	5
COG 9	Listen to tape of word lists	1	2	3	4	5
MET 1	Testing oneself with word lists	1	2	3	4	5
MET 2	Use English language media (songs, movies, newscasts)	1	2	3	4	5
MET 3	Skip or pass new word	1	2	3	4	5
MET 4	Use spaced word practiced	1	2	3	4	5
MET 5	Continue to study word overtime	1	2	3	4	5

Thank you!

APPENDIX B: THE VLSS QUESTIONNAIRE (ARABIC VERSION)

عزيزي الطالب

يهتم هذا الإستبيان بإستراتيجيات تعلم اللغة الإنجليزية عند الطلاب وذلك بغرض جمع المعلومات اللازمة لبحث الدكتوراة خاصتي. بإمكانك عزيزي الطالب المساهمة في إنجاح هذا البحث من خلال إجاباتك على هذا الإستبيان. يرجى العلم بأنه ليست هناك إجابات خاطئة أو صحيحة، كل الإجابات سوف تعبر عن طرقك

الخاصة أو رأيك الشخصي في تعلم معاني اللغة الإنجليزية. لذلك, يرجى مراعاة المصادقية عند تعبئتك لهذا الإستبيان مع العلم بأنّ محتويات هذا الإستبيان سوف تستخدم للأغراض البحثية فقط ولن يكشف عن هوية الطالب بالتأكيد. مشاركتك في هذا البحث سوف يكون له الأثر الطيب في نفس الباحث والباحث بشكل عام.

1. المعلومات الشخصية

أ- الرقم الجامعي:

ب- التخصص:

ت- العمر:

ث- الجنس:

ج- نتيجة إمتحان مستوى اللغة الإنجليزية: ناجح راسب

ح- مدة دراسة اللغة الإنجليزية:

خ- هل سبق وأن تلقيت تعليماً خاصاً باستخدام إستراتيجيات تعلم معاني المفردات

الإنجليزية:

لا

نعم

تتكون القائمة أدناه مجموعة من إستراتيجيات تعلم معاني المفردات باللغة الإنجليزية. يود الباحث معرفة الإستراتيجيات **الفعلية** للطلاب عند تعلم معاني مفردات اللغة الإنجليزية. في حالة عدم إستخدامك لإستراتيجية معينة على الإطلاق, ضع دائرة على رقم 1 (أبداً, 0%). في حالة إستخدامك للإستراتيجية, الرجاء وضع دائرة على أحد الخيارات التالية: 2 (نادراً, 25%), 3 (بعض الأحيان, 50%), 4 (أغلب الأحيان, 75%), 5 (دائماً, 100%). الرجاء قراءة الإستبيان بتمعن قبل القيام بعملية الإجابة مع إعطاء إجابة واحده لكل بند.

بند رقم.	إستراتيجيات تعلم معاني المفردات الإنجليزية	أبداً	نادراً	أحياناً	غالباً	دائماً
1.	أقدر أو اخمن معنى الكلمة من الناحية الإعرابية للكلمة (إسم-فعل-صفة).	1	2	3	4	5
2.	أقدر أو اخمن معنى الكلمة من الجزء الأول للكلمة (Comfortable) والجزء الأخير للكلمة (Unhappy).	1	2	3	4	5
3.	أحاول إيجاد المعنى القريب أو معنى ذا صلة باللغة الأم.	1	2	3	4	5
4.	أقدر المعنى من الصورة المصاحبة عندما تتوفر.	1	2	3	4	5

5	4	3	2	1	أحاول إستنتاج المعنى من خلال النص.
5	4	3	2	1	إستخدم قاموس أحادي اللغة (إنجليزي-إنجليزي).
5	4	3	2	1	أستخدم قاموس ثنائي اللغة (إنجليزي-عربي).
5	4	3	2	1	اكتب الكلمات الجديدة وأرتبها حسب ترتيبها الأبجدي.
5	4	3	2	1	أستخدم البطاقات التعليمية لكتابة معاني المفردات الجديدة.
5	4	3	2	1	أسأل المعلم عن المعنى باللغة العربية.
5	4	3	2	1	أسأل المعلم إعطاء معنى رديف باللغة الإنجليزية.
5	4	3	2	1	أسأل المعلم إعطاء جملة متضمنة الكلمة الجديدة لمحاولة تقدير المعنى من خلال النص.
5	4	3	2	1	أسأل زميلي في المحاضرة عن معنى الكلمة الجديدة.
5	4	3	2	1	أحاول إكتشاف معنى الكلمة الجديدة بمساعدة مجموعة من زملائي داخل المحاضرة من خلال القيام بنشاط خاص بذلك.
5	4	3	2	1	أحاول إستذكار معنى الكلمة الجديدة بمساعدة مجموعة من زملائي داخل المحاضرة من خلال القيام بنشاط خاص بذلك.
5	4	3	2	1	أسأل المعلم أن يتفحص البطاقات التعليمية أو قوائم الكلمات الجديدة لتحري الدقة.
5	4	3	2	1	أحاول الإحتكاك بالناطقين باللغة الإنجليزية لإكتساب المعاني الجديدة.
5	4	3	2	1	أقوم بعملية دمج الكلمات الجديدة مع مواقف وخبرات شخصية.
5	4	3	2	1	أربط الكلمات الجديدة بما يعود عليها من كلمات أخرى. (مطبخ= ملعقة، صحن، تلاجع).
5	4	3	2	1	أقوم بربط الكلمة الجديدة والكلمات التي أعرفها من قبل والتي تكون مشابهة صوتيا للكلمة الجديدة.
5	4	3	2	1	أقوم بربط الكلمة الجديدة مع مرادفاتها (Big=Huge) أو المعنى المعاكس لها (Tall=Short).
5	4	3	2	1	أرسم صورة ذهنية للكلمة المكتوبة.
5	4	3	2	1	أرسم صورة ذهنية أو توضيحية لمعنى الكلمة الجديدة.

بند رقم.	إستراتيجيات تعلم معاني المفردات الإنجليزية	أبدا	نادرا	أحيانا	غالبا	دائما
24	أستخدم أسلوب الكلمة الرئيسية وهو أنني إذا أردت حفظ كلمة أقوم بإيجاد كلمة عربية مشابهة لها في الصوت ككلمة فاين ثم أرسم في ذهني شخصا يستخدم منديلا.	1	2	3	4	5
25	أجمع جميع الكلمات الجديدة معا لدراستها لاحقا.	1	2	3	4	5
26	أدرس الطريقة الإملائية للكلمة الجديدة.	1	2	3	4	5
27	أقوم بترديد الكلمة الجديدة بصوت عال عند دراستي لها.	1	2	3	4	5
28	أحاول نطق الكلمة الجديدة مع إعطاء حركات جسمانية معينة.	1	2	3	4	5

5	4	3	2	1	أتذكر معنى الكلمة الجديدة عن طريق تذكر مكان وجودها (في الشارع أو في المنزل).	29.
5	4	3	2	1	أقوم بربط معنى الكلمة الجديدة مع كلمات أعرفها من قبل.	30.
5	4	3	2	1	أقوم بعمل جدول متضمنا إشتقاق الصفات للكلمة الجديدة.	31.
5	4	3	2	1	أقوم باستخدام طريقة بيج (ربط الكلمة بالأرقام)=(Four-Door).	32.
5	4	3	2	1	أقوم باستخدام طريقة لو كاي (تعلم الكلمات الجديدة من خلال المسار اليومي).	33.
5	4	3	2	1	أقوم بترتيب الكلمات هجانيا على ورقة خارجية.	34.
5	4	3	2	1	أقوم بدراسة النظام الصوتي للكلمة الجديدة.	35.
5	4	3	2	1	أقوم بترتيب الكلمات الجديدة على شكل قصة قصيرة.	36.
5	4	3	2	1	أقوم بوضع الكلمات الجديدة في جمل مفيدة.	37.
5	4	3	2	1	أقوم بتظليل الحرف الأول للكلمة الجديدة للبحث عنها لاحقا.	38.
5	4	3	2	1	أقوم بتخزين الكلمات الجديدة على الكمبيوتر او على القاموس الإلكتروني.	39.
5	4	3	2	1	أقوم بإستذكار جذر الكلمة (Writing) أو اجزائها الأخيرة أو الأولى (Unbelievable).	40.
5	4	3	2	1	أقوم بإستذكار الناحية الإعرابية للكلمة (إسم، فعل، صفة).	41.
5	4	3	2	1	أقوم بإعطاء معنى مرادف للكلمة الجديدة.	42.
5	4	3	2	1	أقوم بإعطاء معنى قريب للكلمة الجديدة من خلال خبراتي السابقة.	43.
5	4	3	2	1	أقوم بتعلم الكلمة الجديدة من خلال ربطها بمثل شعبي.	44.
5	4	3	2	1	أقوم بإعطاء مجموعة من المترادفات والمتناقضات للكلمة الجديدة.	45.
5	4	3	2	1	أقوم بتكرار الكلمة شفويا.	46.
5	4	3	2	1	أقوم بتكرار الكلمة كتابيا.	47.
5	4	3	2	1	أدرس الكلمات الجديدة على شكل قوائم.	48.
5	4	3	2	1	أضع ملصقات على المواد المحسوسة كوضع ملصق كلمة Table على الطاولة.	49.

بند رقم	استراتيجيات تعلم معاني المفردات الإنجليزية	ابدا	نادرا	احيانا	غالبا	دائما
50.	أقوم بالإحتفاظ بدفتر صغير لأكتب عليه الكلمات الإنجليزية الجديدة.	1	2	3	4	5
51.	أستخدم البطاقات التعليمية لتعلم الكلمات الإنجليزية الجديدة.	1	2	3	4	5
52.	أقوم بكتابة الكلمات الإنجليزية الجديدة على دفتر خاص داخل الغرفة الصفية.	1	2	3	4	5
53.	أقوم بتعلم الكلمات الجديدة من خلال نشاط المفردات الموجود في المقرر المدرسي.	1	2	3	4	5

5	4	3	2	1	أقوم بالإستماع للكلمات الجديدة من خلال شريط تسجيل.	.54
5	4	3	2	1	أعطي لنفسي إمتحانات شخصية بالكلمات التي قمت بتعلمها.	.55
5	4	3	2	1	أقوم بتعلم أو مراجعة الكلمات الإنجليزية من خلال مشاهدة التلفاز، الإستماع للمذياع، أو قراءة الصحف الإنجليزية.	.56
5	4	3	2	1	عندما أقوم بقراءة قطعة باللغة الإنجليزية، أقرأها بسرعة أولاً ثم أعود لقراءتها مجدداً لأتأمل بالمعاني الجديدة.	.57
5	4	3	2	1	أقوم بإختبار دراستي للكلمات الجديدة من خلال تمرين إملاء الفراغ.	.58
5	4	3	2	1	أعود لدراسة ومراجعة الكلمات الجديدة مرارا وتكرارا.	.59

شكرا لتعاونكم!

APPENDIX C: THE INTERVIEW QUESTIONS (ENGLISH VERSION)

- 1) What is your name/nickname?
- 2) How many hours a week do you study English in the classroom at your university?
- 3) According to question No. 2, do you think it is enough?
- 4) How is English very important in your daily life?
- 5) How is English important for your future career?
- 6) What do you think is very difficult for you in English language learning?
- 7) What language element do you think is necessary for good listening, speaking, reading, or writing English?
- 8) What do you like to do to help you discover the meanings of English vocabulary, especially when in class?
- 9) What do you like to do to help you discover the meanings of English vocabulary, especially when outside class?
- 10) What do you like to do to help you retain the newly-learned English vocabulary, especially when in class?
- 11) What do you like to do to help you retain the meanings of English vocabulary, especially when outside class?
- 12) What do you like to do to expand English vocabulary when in class?
- 13) What do you like to do to expand your vocabulary, especially when outside class?
- 14) How do you develop a variety of techniques for your vocabulary learning?
- 15) Do you have any comments on vocabulary learning in your present classroom?

APPENDIX D: THE INTERVIEW QUESTIONS (ARABIC VERSION)

- 1) عرفنا بنفسك لطفاً؟
- 2) كم ساعه في الإِسبوع تمضيها في دراسة اللغه الإنجليزيه داخل جامعتك؟
- 3) هل تعتقد أن تلك المده كافيه لتعلم اللغه الإنجليزيه؟
- 4) كيف تقيم أهمية اللغه الإنجليزيه في حياتك اليوميه؟
- 5) كيف تقيم أهمية اللغه الإنجليزيه في وظيفتك المستقبليه؟
- 6) ما هي أصعب مهارات اللغه الإنجليزيه بوجهة نظرك؟
- 7) ما هي العناصر المهمه بوجهة نظرك لتكون ماهرا بكل مهارات اللغه الإنجليزيه سواءا الإستماع, المحادثه, القراءه, و الكتابه؟
- 8) ما هي الإستراتيجيات التي تتبعها لتعلم معاني مفردات اللغه الإنجليزيه داخل الغرفه الصفيه؟
- 9) ما هي الإستراتيجيات التي تتبعها لتعلم معاني مفردات اللغه الإنجليزيه خارج الغرفه الصفيه؟
- 10) ما هي الإستراتيجيات التي تتبعها لتذكر معاني مفردات اللغه الإنجليزيه داخل الغرفه الصفيه؟
- 11) ما هي الإستراتيجيات التي تتبعها لتذكر معاني مفردات اللغه الإنجليزيه خارج الغرفه الصفيه؟
- 12) ما هي الإستراتيجيات التي تتبعها لتوسع معرفتك باللغه الإنجليزيه داخل الغرفه الصفيه؟
- 13) ما هي الإستراتيجيات التي تتبعها لتوسع معرفتك باللغه الإنجليزيه خارج الغرفه الصفيه؟
- 14) كيف تطور مجموعه من الطرق في سبيل تعلم معاني اللغه الإنجليزيه؟
- 15) هل هناك أي تعليق بالنسبه لتدريس مفردات اللغه الإنجليزيه في محاضراتك الحاليه؟

APPENDIX E: INTERVIEW SAMPLE

Interviewer: Fadi Al-Khasawneh

Interviewee: Agriculture 4

Date: July 10th, 2011

Time: 2p.m

Place: Faculty of Agriculture (JUST)

.....

...

Me: Assalamualaikum.

Interviewee: Walaikumsalam.

Me: Please have a seat.

Interviewee: Thanks a lot.

Me: How are you today?

Interviewee: Fine alhamdulillah, and you?

Me: I'm fine alhamdulillah. My name is Fadi, **Q1 what is your name?**

Interviewee: My name is Milad. I'm a first year majoring in Agriculture.

Me: good good. I wish you all the success. I have some questions to ask you about your English vocabulary learning and I wish you to cooperate with me.

Interviewee: It's my pleasure.

Me: have you taken your fundamental or basic English 1 and 2?

Interviewee: Yes, this semester.

Q2 So, How many hours a week do you study English?

Interviewee: Emmmmm..... Four hours a week.

Me:Q3 Do you think it's enough to study four hours a week for English?

Interviewee: I think it's enough for me to study four hours a week. For me, I go back and review what I've learned lesson by lesson, so it will be easy for me to remember what I've learned.

Me: Ok, my next question is **Q4 how English is important for you in your study?**

Interviewee: of course English is extremely important for my study. I need English to understand my lecturers as English is the medium of instruction in this university.

Me: what else?

Interviewee: Also, I need English to search about information which lecturers ask us to do such as assignments, projects, and presentations. I also need English to communicate with the foreign students who are studying at our class especially if we have been asked to do a group project or assignment.

Me: good **Q5 let me know about the importance of English in your future career?**

Interviewee: as you know, high quality jobs need good understanding ability and speaking in English. So, big companies especially those who have branches overseas employ graduates whose English is fluent. The student who is graduated from a university which takes English as a medium of instruction as happening at JUST will find a better job than other students who don't know English.

Me: You are right.

Me: but **Q6 do you think that English is difficult?**

Interviewee: Emmmmm.....I think that English language is easy to learn but difficult to master.

Me: Interesting but how?

Interviewee: In my opinion, English is easier than Arabic but because of our culture, it would be difficult to express what exactly we want to say.

Me: Can you elaborate on that?

Interviewee: Ok, when I watch American movies for example, I hear to some new sentences which I didn't hear before. It seems like it is used within the American society only. So, the best way to learn English is to communicate with native speakers of English.

Me: Then, Q7 what language element do you think is necessary for good listening, speaking, reading, or writing English?

Interviewee: Emmmmm..... I think the most important elements to be good in English is to have a large amount of vocabulary to produce sentences and to be very good in grammar to connect these sentences with each other.

Me: Ok, very good. I would like to ask you about the Q8 strategies that you use to discover the meaning of words you encounter inside the classroom?

Interviewee: I use a dictionary to know the meaning of new words.

Me: Monolingual or bilingual dictionary?

Interviewee: bilingual dictionary.

Me: Ok, suppose that you are not allowed to use dictionary inside the class, what are the other strategies that you use to know the meaning of unknown words?

Interviewee: Emmm....I ask my friends about the meaning of the new word. If they don't know, I'll ask my teacher about the meaning of the word.

Me: Ok. Q9 what do you do to help you discover the meanings of English vocabulary when you are at home?

Interviewee: I also use dictionary when I'm at home.

Me: Then, what else do you do to know the meanings of new words?

Interviewee: when I'm at home, I use only bilingual dictionary.

Me: Ok. **Q10 now, what do you like to do to help you retain the newly-learned English vocabulary, especially when in class?**

Interviewee: I write the new words in a separate sheet of paper in order to memorize them later when I go back home.

Me: good. **Q11 what do you like to do to help you retain the meanings of English vocabulary, especially when outside class?**

Interviewee: I try to use the new words that I've learned in simple sentences and also use those words when I chat with native speakers. In case of chatting, I use the new word and then ask the native speaker if that was a possible use. If it was not correct, I ask him/her to give me another word which is suitable.

Me: Ok good, **Q12 what do you like to do to expand English vocabulary when in class?**

Interviewee: inside class?

Me: Yes.

Interviewee: Ok. I try to communicate with my friends who are proficient in English or even the foreign students in my class. I rely on my friends in knowing new English words.

Me: Ok, **Q13 what do you like to do to expand English vocabulary when outside class?**

Interviewee: Emmmmm ... I keep reading to improve myself in English.

Me: Reading what?

Interviewee: I read English materials such as newspapers, magazines, advertisements. I try to write the newly learned words and know the meaning by using bilingual dictionary.

Me: what else?

Interview: sometimes, I like to chat with native speakers who I find on chatting rooms. As I told you earlier, the best way to know English is to communicate with native speakers.

Me: Do you think it's a good way to learn new vocabulary?

Interviewee: Of course, when I chat with a native speaker of English, I can learn many new words. If I don't the meaning of some words, I ask him/her to give me a synonym of that word and the definition of that word if I didn't understand the meaning of the synonym.

Me: It's really good. Anything you want to add?

Interviewee: No thanks.

Me: Thank you for your valuable information.

Interviewee: It's my pleasure!

APPENDIX F: RESULTS OF THE PILOT STUDY

Overall Strategy Use

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Overall	30	1.54	3.83	2.8232	.54198
Valid N (listwise)	30				

Overall Strategy Use in the Five Categories

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Det	30	2.11	4.11	3.2259	.57881
Soc	30	1.63	4.38	3.0375	.65336
Mem	30	1.00	4.14	2.7679	.67885
Cog	30	1.00	4.44	2.6852	.88027
Met	30	1.00	4.80	2.3133	.75326
Valid N (listwise)	30				

Individual Strategy Use

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I analyze part of speech	30	1	5	3.20	1.375
Analyze affixes and roots	30	1	5	3.03	1.351
Check for L1 cognate	30	1	5	3.67	1.155
Analyze through available pictures or gestures	30	2	5	3.73	.828
Guess meaning from textual context	30	1	5	4.07	1.081
Use bilingual dictionary	30	1	5	3.03	1.299

Use monolingual dictionary	30	1	5	3.80	1.215
Word lists	30	1	5	2.67	1.213
Flash cards	30	1	5	1.83	1.053
Ask teacher for L1 translation	30	2	5	3.70	1.022
Ask teacher for paraphrase or synonym of new word	30	1	5	3.00	1.339
Ask teacher for a sentence including the new word	30	1	5	2.83	1.262
Ask classmates for meaning	30	1	5	3.70	1.022
Discover new meaning through group work activity	30	1	5	3.23	1.357
Study and practice meaning in group	30	1	5	2.87	1.279
Teacher checks students flash cards or word lists for accuracy	30	1	5	2.20	1.324
Interact with native speakers	30	1	5	2.77	1.382
Connect word to previous personal experience	30	1	5	2.87	1.252
Use semantic maps	30	1	5	2.93	1.388
Associate the word with its coordinates	30	1	5	2.90	1.269
Connect the word in its synonyms and antonyms	30	1	5	3.57	1.104
Image word form	30	1	5	3.37	1.217
Image word's meaning	30	1	5	2.87	1.279
Use keyword method	30	1	5	2.97	1.377
Group words together to study them	30	1	5	2.87	1.279
Study the spelling of a word	30	1	5	3.27	1.363
Say new word aloud when studying	30	1	5	3.07	1.337
Use physical action when learning a word	30	1	5	2.53	1.383
Study word with a pictorial representation of its meaning	30	1	5	3.10	1.213

Associate the word with its coordinates	30	1	5	3.07	1.081
Use scales for gradable adjectives	30	1	5	2.27	1.363
Peg method	30	1	5	2.33	1.348
Loci method	30	1	5	2.17	1.416
Group words spatially on a page	30	1	5	2.47	1.279
Study the sound of a word	30	1	5	2.73	1.337
Group words together within a storyline	30	1	4	2.03	.999
Use new words in sentences	30	1	5	2.50	1.106
Underline initial letter of the word	30	1	5	2.50	1.383
Configuration	30	1	5	2.50	1.480
Affixes and roots (remembering)	30	1	5	2.40	1.329
Part of speech (remembering)	30	1	5	2.53	1.279
Paraphrase the word's meaning	30	1	5	2.93	1.258
Use cognates in study	30	1	5	3.10	1.242
Learn the word of an idiom together	30	1	5	2.70	1.236
Use semantic features grids	30	1	5	2.97	1.273
Verbal repetition	30	1	5	3.50	1.333
Written repetition	30	1	5	3.20	1.400
Word lists	30	1	5	2.63	1.377
Put English labels on physical objects	30	1	5	2.20	1.157
Keep a vocabulary notebook	30	1	5	2.43	1.251
Flash cards	30	1	5	2.27	1.311
Take notes in class	30	1	5	2.70	1.512
Use the vocabulary section in your textbook	30	1	5	2.83	1.341
Listen to tape of word lists	30	1	5	2.40	1.248

Testing oneself with word lists	30	1	4	2.07	.868
Use English language media (song, movies)	30	1	5	2.07	1.112
Skip or pass new word	30	1	5	2.33	1.184
Use spaced word practiced	30	1	5	2.40	1.070
Continue to study word overtime	30	1	5	2.70	1.236
Valid N (listwise)	30				

APPENDIX G: NATION'S VOCABULARY SIZE TEST

First 1000

1. See: They saw it.
 - a. cut
 - b. waited for
 - c. looked at
 - d. Started

2. Time: They have a lot of time.
 - a. money
 - b. food
 - c. hours
 - d. friends

3. Period: It was a difficult period.
 - a. question
 - b. time
 - c. thing to do
 - d. book

4. Figure: Is this the right figure?
 - a. answer
 - b. place
 - c. time
 - d. number

5. Poor: We are poor.
 - a. have no money
 - b. feel happy
 - c. are very interested
 - d. do not like to work hard

6. Drive: He drives fast.
 - a. swims
 - b. learns
 - c. throws balls
 - d. uses a car

7. Jump: She tried to jump.
 - a. lie on top of the water
 - b. get off the ground suddenly
 - c. stop the car at the edge of the road
 - d. move very fast

8. Shoe: Where is your shoe?
 - a. the person who looks after you
 - b. the thing you keep your money in
 - c. the thing you use for writing
 - d. the thing you wear on your foot

9. Standard: Her standards are very high.
a. the bits at the back under her shoes
b. the marks she gets in school
c. the money she asks for
d. the levels she reaches in everything
10. Basis: I don't understand the basis.
a. reason
b. words
c. road signs
d. main part

Second 1000

1. Maintain: Can they maintain it?
a. keep it as it is
b. make it larger
c. get a better one than it
d. get it
2. Stone: He sat on a stone.
a. hard thing
b. kind of chair
c. soft thing on the floor
d. part of a tree
3. Upset: I am upset.
a. tired
b. famous
c. rich
d. unhappy
4. Drawer: The drawer was empty.
a. sliding box
b. place where cars are kept
c. cupboard to keep things cold
d. animal house
5. Patience: He has no patience.
a. will not wait happily
b. has no free time
c. has no faith
d. does not know what is fair
6. Nil: His mark for that question was nil.
a. very bad
b. nothing
c. very good
d. in the middle
7. Pub: They went to the pub.
a. place where people drink and talk
b. place that looks after money
c. large building with many shops
d. building for swimming

8. Circle: Make a circle.
- a. rough picture
 - b. space with nothing in it
 - c. round shape
 - d. large hole
9. Microphone: Please use the microphone.
- a. machine for making food hot
 - b. machine that makes sounds louder
 - c. machine that makes things look bigger
 - d. small telephone that can be carried around
10. Pro: He's a pro.
- a. someone who is employed to find out important secrets
 - b. a stupid person
 - c. someone who writes for a newspaper
 - d. someone who is paid for playing sport etc.

Third 1000

1. Soldier: He is a soldier.
- a. person in a business
 - b. student
 - c. person who uses metal
 - d. person in the army
2. Restore: It has been restored.
- a. said again
 - b. given to a different person
 - c. given a lower price
 - d. made like new again
3. Jug: He was holding a jug.
- a. a container for pouring liquids
 - b. an informal discussion
 - c. a soft cap
 - d. a weapon that explodes
4. Scrub: He is scrubbing it.
- a. cutting shallow lines into it
 - b. repairing it
 - c. rubbing it hard to clean it
 - d. drawing simple pictures of it
5. Dinosaur: The children were pretending to be dinosaurs.
- a. robbers who work at sea
 - b. very small creatures with human form but with wings
 - c. large creatures with wings that breathe fire
 - d. animals that lived an extremely longtime ago
6. Strap: He broke the strap.
- a. promise
 - b. top cover
 - c. shallow dish for food
 - d. strip of material for holding things together

7. Pave: It was paved.
 - a. prevented from going through
 - b. divided
 - c. given gold edges
 - d. covered with a hard surface

8. Dash: They dashed over it.
 - a. moved quickly
 - b. moved slowly
 - c. fought
 - d. looked quickly

9. Rove: He couldn't stop roving.
 - a. getting drunk
 - b. traveling around
 - c. making a musical sound through closed lips
 - d. working hard

10. Lonesome: He felt lonesome.
 - a. ungrateful
 - b. very tired
 - c. lonely
 - d. full of energy

Fourth 1000

1. Compound: They made a new compound.
 - a. agreement
 - b. thing made of two or more parts
 - c. group of people forming a business
 - d. guess based on past experience

2. Latter: I agree with the latter.
 - a. man from the church
 - b. reason given
 - c. last one
 - d. answer

3. Candid: Please be candid.
 - a. be careful
 - b. show sympathy
 - c. show fairness to both sides
 - d. say what you really think

4. Tummy: Look at my tummy.
 - a. cloth to cover the head
 - b. stomach
 - c. small furry animal
 - d. thumb

5. Quiz: We made a quiz.
 - a. thing to hold arrows
 - b. serious mistake
 - c. set of questions
 - d. box for birds to make nests in

6. Input: We need more input.
 - a. information, power, etc. put into something
 - b. workers
 - c. artificial filling for a hole in wood
 - d. money

7. Crab: Do you like crabs?
 - a. sea creatures that walk sideways
 - b. very thin small cakes
 - c. tight, hard collars
 - d. large black insects that sing at night

8. Vocabulary: You will need more vocabulary.
 - a. words
 - b. skill
 - c. money
 - d. guns

9. Remedy: We found a good remedy.
 - a. way to fix a problem
 - b. place to eat in public
 - c. way to prepare food
 - d. rule about numbers

10. Allege: They alleged it.
 - a. claimed it without proof
 - b. stole the ideas for it from someone else
 - c. provided facts to prove it
 - d. argued against the facts that supported it

Fifth 1000

1. Deficit: The company had a large deficit.
 - a. spent a lot more money than it earned
 - b. went down a lot in value
 - c. had a plan for its spending that used alot of money
 - d. had a lot of money stored in the bank

2. Weep: He wept.
 - a. finished his course
 - b. cried
 - c. died
 - d. worried

3. Nun: We saw a nun.
 - a. long thin creature that lives in the earth
 - b. terrible accident
 - c. woman following a strict religious life
 - d. unexplained bright light in the sky

4. Haunt: The house is haunted.
 - a. full of ornaments
 - b. rented
 - c. empty
 - d. full of ghosts

5. Compost: We need some compost.
 - a. strong support
 - b. help to feel better
 - c. hard stuff made of stones and sand stuck together
 - d. rotted plant material

6. Cube: I need one more cube.
 - a. sharp thing used for joining things
 - b. solid square block
 - c. tall cup with no saucer
 - d. piece of stiff paper folded in half

7. Miniature: It is a miniature.
 - a. a very small thing of its kind
 - b. an instrument for looking at very small objects
 - c. a very small living creature
 - d. a small line to join letters in handwriting

8. Peel: Shall I peel it?
 - a. let it sit in water for a long time
 - b. take the skin off it
 - c. make it white
 - d. cut it into thin pieces

9. Fracture: They found a fracture.
 - a. break
 - b. small piece
 - c. short coat
 - d. rare jewel

10. Bacterium: They didn't find a single bacterium.
 - a. small living thing causing disease
 - b. plant with red or orange flowers
 - c. animal that carries water in lumps on its back
 - d. thing that has been stolen and sold to

APPENDIX H: LESSON PLAN (WEEK 4)

Topic: Metacognitive strategies training **Lesson No. 4**

Date: July 23, 2011 **Number of students:** 30 (Experimental Group)

Lesson Objectives:

- To explain the meaning of metacognitive strategies to the students.
- To show the main components of Cognitive Academic Language Learning Approach (CALLA).
- To elicit the student's prior knowledge of metacognitive strategies.

Lesson Structure:

Time	Introduction (Set)	Teaching Materials/Activities
10am-10.15am	<p>Warm up: greet students.</p> <p>Stating the objectives of the current experiment.</p> <p>Try to motivate students to achieve the tasks of this experiment.</p>	
Time	Main Content:	Teaching Materials/Activities
10.15am-10.30am	The teacher will discuss and explain the nature of metacognitive strategies.	- Laptop, data show.
10.30am-10.50am	The teacher will show the main components of CALLA model of metacognitive strategies instruction.	- Laptop, data show, realia.
10-50am-11.15am	The teacher will distribute worksheets containing some of the metacognitive strategies to raise the students' awareness of such strategies. The students will be given the opportunity to share their ideas on this topic.	- Worksheets.

APPENDIX I: LESSON PLAN (WEEKS 5+6)

Topic: Metacognitive strategies training **Lesson No. 5+6**

Date: August 6, 2011 **Number of students:** 30(Experimental Group)

Lesson Objectives:

- Students will be able to practice vocabulary learning strategies with an authentic learning task.
- To encourage students to make conscious efforts using the metacognitive strategies in combination with vocabulary learning strategies.

LESSON STRUCTURE:

Time	Introduction (Set)	Teaching Materials/Activities
10am-10.30am	Warm up: Greet students. Giving feedback for the previous assignment. State the objectives of the lesson.	
Time	Main Content:	Teaching Materials/Activities
10.30am-10.45am	The teacher explains to the students how to use and when to monitor the use of vocabulary learning strategies.	Laptop, data show, blackboard, chalkboard, and text book.
10.45am-11.20am	The students practice to achieve the learning task themselves. Students will be allowed to ask questions while doing the task.	
Time	Closure	Teaching Materials/Activities
11.20am-11.30	Review the main points of the lesson. Giving the opportunity to the students to ask and the teacher will answer their questions.	

APPENDIX J: LESSON PLAN (WEEKS 7+8)

Topic: Metacognitive strategies training **Lesson No. 7+8**

Date: August 20, 2011 **Number of students:** 30 (Experimental Group)

Lesson Objectives:

- To provide opportunities to the students to evaluate their strategies in learning English vocabulary.

LESSON STRUCTURE:

Time	Introduction (Set)	Teaching Materials/Activities
10am-10.15am	Warm up: Greet students. State the objectives of the lesson.	
Time	Main Content:	Teaching Materials/Activities
10.15am-10.45am 10-45am-11.20am	The teacher will ask the students to write working diaries (in groups) about the difficulties students encounter in learning vocabulary, how the students overcame the difficulties, and what remained unsolved. The students will be given the opportunity to have a discussion about each other's working diaries.	Working diaries.
Time	Closure	Teaching Materials/Activities
11.20am-11.30	The teacher will give his comments on the students' discussion. Giving the opportunity to the students to ask and the teacher will answer their questions.	

APPENDIX K: LESSON PLAN (WEEKS 9+10)

<p>Topic: Metacognitive strategies training Lesson No. 9</p> <p>Date: August 27, 2011 Number of students: 30 (Experimental Group)</p>
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Lesson Objectives:

<ul style="list-style-type: none"> - To provide opportunities to the students to share their experience about the summary report of the previous lesson with their counterparts.

LESSON STRUCTURE:

Time	Introduction (Set)	Teaching Materials/Activities
10am-10.15am	Warm up: Greet students. State the objectives of the lesson.	
Time	Main Content:	Teaching Materials/Activities
10.15 am-11.15	The teacher will ask each group of the students to present their summary report. After presentations, the students will be asked to share ideas about each other's reports.	
Time	Closure	Teaching Materials/Activities
11.15am-11.30	The teacher will give his comments on the students' discussion. Giving the opportunity to the students to ask and the teacher will answer their questions. The teacher will inform the students about the post-test which will be conducted in the next class containing both groups (control group and experimental group).	