Investigating the Influence of Two Memory Strategies on Long-Term Vocabulary Retention: Semantic Mapping versus Wordlists

استقصاء تأثير اثنين من استراتيجيات الذاكرة على الاحتفاظ بمفردات اللغة في الذاكرة طويلة المدى: الخرائط الدلالية مقابل قوائم المفردات

by

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Abstract

Semantic mapping is the study of lexical items by creating a relationship between the target words and some inter-related words using visuals in the form of maps or graphs, while wordlists are the study of lexical items in lists and sentences by explaining the meaning of the new words in the target language, English. The aim of this research is to investigate the effectiveness of semantic mapping and wordlists on students' development and retention of L2 vocabulary. The researcher at the outset of the experiment hypothesizes that the students instructed in semantic mapping outperform those who employ wordlists. This is as a result of the network built in students' mental lexicon and the visual aids used in L2 vocabulary teaching.

To test the hypothesis of the research, four ESL classes from two different research sites forming a total of 60 participants, 10^{th} graders, were randomly chosen as the main sample of this research. Also, the four ESL classes were randomly divided into two control groups and two experimental groups. After that, a pre-test in a multiple-choice format was run to ascertain whether the participants have the same low level of the target words prior to the experiment to assure their homogeneity. The target words, forty words, were selected by the class teachers from the 10^{th} graders' course book and then used by the researcher for the purpose of conducting the research experiment.

Six weeks later, the same test was re-administered but with the content of the test re-organized to measure participants' development and retention of the target words at the end of the experiment. Another test, a delayed post-test, was administered three days after the post-test to enhance the reliability of the research tools and results. The results revealed a big difference in participants' knowledge level of the target words before and after the experiment, and this difference was statistically significant for the participants who employed semantic mapping strategy.

الخلاصة

تُعرف الخريطة الدلالية بأنها تلك الإستراتيجية التي تُستخدم لدراسة مفردات اللغة من خلال انشاء علاقة أو ارتباط بين المفردات المراد تعلمها وبين بعض المفردات الأخرى ذات الصلة وذلك باستخدام بعض المساعدات البصرية في شكل خرائط أو رسوم بيانية، بينما تُعرف قائمة المفردات بأنها تلك الإستراتيجية التي تُستخدم لدراسة مفردات اللغة من خلال انشاء قوائم لغوية وبيان معناها باستخدام اللغة المستهدفة وهي اللغة الإنجليزية، ويهدف هذا البحث إلى استقصاء مدى فاعلية هاتين الاستراتيجيتين على تطوير مفردات اللغة لدى الطلاب وقدرة هؤلاء الطلاب على الاحتفاظ بهذه المفردات في الذاكرة طويلة المدى، ويفترض الباحث في مستهل بحثه بأن الخرائط الدلالية سيكون لها تأثير أكبر على تطوير مفردات اللغة والاحتفاظ بهذه المفردات لفترة أطول في الذاكرة طويلة المدى عن قائمة المفردات بسبب الارتباط التي تُحدثه الخرائط الدلالية داخل المعجم العقلي للطلاب بالإضافة إلى المساعدات البصرية التي تنتهجها الخرائط الدلالية في تدريس مفردات اللغة.

ولمعرفة مدى صحة هذه الفرضية قام الباحث بشكل عشوائي باختيار عدد 4 فصول دراسية يتم فيها تدريس مادة اللغة الإنجليزية كلغة ثانية وبمجموع 60 طالب للفصول الأربعة وهم الذين يشكلون العينة الرئيسية لهذا البحث، كما قام الباحث بتقسيم هذه الفصول الأربعة بشكل عشوائي أيضاً إلى عدد 2 مجموعة مرجعية وعدد 2 مجموعة تجريبية، وبعدها قام الباحث بإجراء اختبار أولى في شكل اختيار من متعدد للتحقق من مدى تمتع الطلاب المشاركين في البحث بنفس المستوى المعرفي المحدود فيما يخص المفردات محل الدراسة وذلك قبل بدء التجربة، وهذه المفردات عبارة عن 40 كلمة مختارة بواسطة مدرسي الفصول الدراسية من كتاب الصف العاشر وهي التي استخدمها الباحث كمادة للبحث لغرض تنفيذ التجربة.

وقام الباحث بعد ستة أسابيع من التجربة بإجراء نفس الاختبار ولكن بتبديل ترتيب الأسئلة لقياس مدى تطور مستوى الطلاب المشاركين في البحث واحتفاظهم بمفردات اللغة المراد تعلمها في الذاكرة طويلة المدى، كما قام الباحث بعد ثلاثة أيام من هذا الاختبار الثاني بإجراء اختبار ثالث للتأكد من دقة أدوات البحث ونتائجه، وأظهرت نتائج البحث وجود اختلاف كبير في المستوى المعرفي للطلاب المشاركين في البحث فيما يخص المفردات المراد تعلمها وذلك مع نهاية التجربة، كما بيَنت النتائج أن لهذا الاختلاف دلالة احصائية بالنسبة للطلاب الدارسين للمفردات باستخدام استراتيجية الخريطة الدلالية.

Dedication

With love and pride, I dedicate this dissertation to my father, Morshed Badr, and to the soul of my grandfather, Elsayed Badr, may God rest him in peace, whose voices still ring in my ear encouraging me to do my best to hold senior positions and achieve high ranks on both academic and professional levels, and from whom I learnt all meanings of love, sacrifice, fidelity, honesty and respect for my family and for others. They are always my exemplary model of how to be ambitious, patient and tolerant without which I have to admit that this work could not have been possible. I also dedicate this dissertation to my sincere wife, Asmaa Khairi, who always showers me with support and encouragement at the time when my body is tired, my spirit is weary and my soul is exhausted.

This work is especially dedicated to my mother, Khadra Ismail, may God reward her, who is always the first person to feel me and stand by me through thick and thin. Moreover, I dedicate this work to my brother, Osama, and to my beloved sisters: Hanan, Maiada, Horeya, Rabab and Ikram, who show countless acts of love, support, hospitality and encouragement at all times, and pray for me and wish me success in my life. This dedication is also given to my lovely two kids: Omar and Mariam, who are the source of my happiness and my motive for success. Finally, I want to say that all of you always reside in my heart and I will never forget you all, hoping that you accept this dedication as a humble “thank you” for everything you have done and continue to do for me.

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Chapter One: Introduction

1.1. Introduction

In order to reach proficiency level of a second language, second language learners have to learn and store as much vocabulary as they can. This means that the more words learners know and store from a second language, the better they can express their views and ideas and communicate with others using that language. In the classroom context, research indicates that students with low vocabulary knowledge level do not become involved in classroom language activities and are unable to communicate effectively with other students and with language teachers (Rubin & Thompson 1994). In other words, without an ample vocabulary base, students will not be able to read, write or speak a second language. Furthermore, they will not be able to produce rich answers, give comments, seek clarifications, ask questions or even understand the content of lessons.

Research also demonstrates that acquiring L2 vocabulary in the classroom is not that easy or simple as language learners are always encountered with many difficulties and challenges, one of which is to retrieve or remember the meaning of words being learnt/ taught (Bani Abdelrahman 2013). This study is designed to investigate the influence of two memory strategies (semantic mapping and wordlist strategies) on students' development and retention of L2 vocabulary to know which strategy is more effective to enhance students' vocabulary knowledge level and retention when applied in the classroom context. The following sections are discussed throughout this chapter to provide a good introduction to the present research.

1- Background to L2 vocabulary teaching strategies.
2- Semantic mapping and wordlist as employed by the researcher of this study.
3- Rationale, aim & objective of the study.
4- Scope of the study.
5- Significance of the study.
6- Research questions & hypotheses.

1.2. Background to L2 vocabulary teaching strategies

As reported by Carter and McCarthy (2014), L2 vocabulary teaching was an ignored part in the language teaching process in the past. In this regard, Allen (2009) gave some reasons why L2 vocabulary teaching was taken apart from the language teaching process when she said that L2 vocabulary teaching was not given the necessary appreciation or attention by both language teachers and researchers in the past. She went on to say that, there was also a belief among language teachers and researchers that there is no need to teach L2 vocabulary in classroom settings as students are able to learn vocabulary by themselves. Carter and McCarthy (2014) added more emphasis to this belief when they said that paying much more attention to L2 vocabulary teaching in classroom settings will leave the impression among L2 students that the second language can be easily acquired if only presented by some vocabularies.

Furthermore, Nation (2013) argued that L2 teachers were aware that it is not easy or simple to teach L2 vocabulary as it is not only a matter of translating the meaning of words from one language into another. He continued to say that language teachers realized that to achieve an effective vocabulary teaching, some innovative vocabulary teaching techniques and strategies have to be employed in L2 classrooms to expand students' vocabulary knowledge level and promote their productive and receptive retrieval processes.

As this area of research was neglected by researchers as mentioned above, no innovative strategies for L2 vocabulary teaching were developed, and as a result, language teachers turned aside from teaching L2 vocabulary to teaching L2 grammar as a more secure way to acquire the second language (Zimmerman 1997). In other words, L2 vocabulary teaching was lost between providers (teachers) and developers (researchers) of the language teaching process, and the focus was given to teaching the grammar instead as a safe way to acquire the second language. The old and long-lasting strategy used in L2 vocabulary teaching during that time was the use of bilingual lists or vocabulary drills (Brown 2007).

More recently, and with the development of theories and concepts, the role of vocabulary in L2 acquisition has been recognized, appreciated and given the necessary attention by both language teachers and researchers. For example, Wilkins (1996) noted

that meaning can be understood and conveyed without grammar, but nothing can be understood or conveyed without vocabulary. Therefore, the whole scene changed and both language teachers and researchers started to realize the crucial role played by L2 vocabulary teaching in developing the four basic skills of the second language and in enhancing students' language communicative competence as well.

As a result, some innovative strategies have been developed by language teachers and researchers to achieve effective L2 vocabulary teaching, and these strategies were called vocabulary language strategies (Gu & Johnson 1996). Vocabulary language strategies (VLSs) were defined by Schmitt (2011) as strategies adopted by language teachers to facilitate the process of L2 vocabulary teaching and to enhance students' retention of L2 vocabulary. These strategies, including the two strategies under investigation, were listed and categorized by Gu and Johnson (1996) as the most effective teaching strategies to enhance students' knowledge level and retention of L2 vocabulary.

1.3. Semantic mapping and wordlist strategies

1.3.1. Semantic mapping strategy

In the literature, semantic mapping is defined as the use of visual aids in the form of maps or graphs to make a connection between the words that already exist in the mind and the new words for longer retention of the new words (e.g., Radwan & Rikala-Boyer 2011, Nilforoushan 2012, Khoii & Sharififar 2013). According to Carrell, Pharis and Liberto (1989), this strategy is designed to display the relationship or the connection between the central words and some inter-related words through some visually represented maps or diagrams.

For the purpose of this research, semantic mapping strategy is employed in the classroom by drawing, on the class board, some connected circles, squares, ovals or lines between the central words to be learnt and some inter-related words that are already known. The following figure is an example of how this strategy is structured and employed in the classes under investigation.

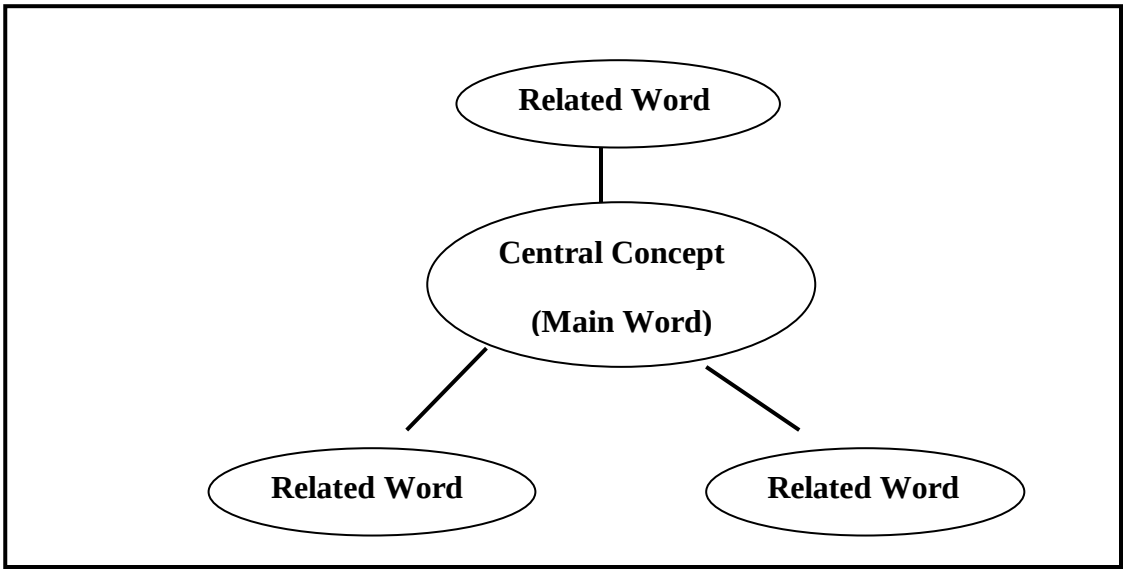

Figure 1: Semantic mapping structure

1.3.2. Wordlist strategy

Wordlists are defined in the literature as the study of L2 vocabulary in lists and sentences to improve students' knowledge base and retention of L2 vocabulary (e.g. Qian1996, Laufer & Shmueli 1997). According to Mehrpour (2008), wordlist strategies are the study of words in lists with an explanation of their meanings in the target language or with a translation of their meanings in the first language for longer memorization of these words.

For the purpose of this research, the wordlist strategy is employed in the classroom through a list of words (English words) written on the class board by the class teachers along with an explanation of their meaning in the target language (English language). The following figure is an example of how the wordlist strategy is structured and employed in the classrooms under investigation.

Wordlist	Explanation
Accommodation	A room, building, or space in which someone may stay or live.
Authority	The right or power to give orders and enforce obedience.
Capacity	The maximum amount that something can produce or contain.
Manipulate	To handle an instrument or a tool in a skillful manner.
Forthcoming	About to happen to appear.
Circumstance	A fact or condition connected with or relevant to an event or action
Concurrent	Existing or happening at the same time

Figure 2: Wordlist structure

1.4. Rationale, aim & objective of the study

In the literature, few studies were conducted to investigate the influence of semantic mapping on students' development and retention of L2 vocabulary as the ones carried out by Radwan and Rikala-Boyer (2011) and Nilforoushan (2012). In like manner, little research was carried out to explore the effectiveness of wordlist strategies on students' vocabulary development and retention as the one conducted by Kuo and Ho (2012). The results of these studies showed that both semantic mapping and wordlists played a significant role in developing students' knowledge base and increasing their retention of L2 vocabulary. However, and because of the scarcity of research on the influence of these two strategies, more research has to be carried out to support or reject the results of the above studies.

Moreover, research on the best memory strategy to be used in L2 vocabulary teaching to prolong students' retention of L2 vocabulary is very scarce. In this regard, the literature showed only an attempt by Khoii and Sharififar (2013) who compared the influence of two memory strategies (memorization by repetition and semantic mapping) on students' retention of L2 vocabulary. The result of this study indicated that the difference in students' retention level of L2 vocabulary was not statistically significant when both strategies were employed in the classroom. It was then concluded that the employment of any of these two strategies would give the same effect on students' retention of L2 vocabulary. However, and to the best of researcher's knowledge, no studies were conducted to compare the influence of semantic mapping and wordlist

strategies on students' retention of L2 vocabulary. Therefore, there is a need for research on this critical area to know which strategy is more effective to enhance students' retention of L2 vocabulary when applied in the classroom context.

To summarize the above, the researcher of this study sees that great effort needs to be exerted to establish strong evidence of the influence of both strategies on students' development of L2 vocabulary. In like manner, there is a need to answer an important question always put forward by language teachers about the best memory strategy that can be employed in the classroom settings to increase students' retention level of L2 vocabulary.

Based on the above, the researcher of the current study has decided to tackle these two critical areas in his research. To do so, the researcher of this study put for investigation both semantic mapping and wordlist strategies to explore their influence on students' development of L2 vocabulary. The researcher has also decided to go further in his research by comparing the results of the data analysis to know which strategy has a greater influence on students' retention of L2 vocabulary over a period of time. Accordingly, it was expected that this research would add to the literature by providing some invaluable information about the most effective strategy that can be used by L2 teachers in the classroom to enhance students' development and retention of L2 vocabulary.

1.5. Scope of the study

Since its main concentration is to explore and compare the effectiveness of both semantic mapping and wordlist strategies on students' development and retention of L2 vocabulary, the scope of the current study is narrowed to examine L2 vocabulary recognition rather than L2 vocabulary production, and this objective can best be achieved by designing two tests in a multiple-choice format, pre-test and post-test, to be the tools of the study. To keep the research more focused, the current research examines the effectiveness of both strategies on high school students, 10^{th} graders, at two research sites located in two different Emirates in UAE, Dubai and Sharjah Emirates.

1.6. Significance of the study

The researcher of the current study wants to tackle a problem faced by many students in L2 classrooms. The problem as noticed by me, a language teacher for almost 10 years, is that it is difficult for students to remember the meaning of words being taught by language teachers in the classroom. The result is very frustrating for both language teachers and L2 students who seek rich production of the second language in L2 classrooms and effective communication using that language in proper contexts.

Therefore, the researcher of this study sees that it is important to search for an effective strategy to be employed in the classroom to foster longer retention of words. In this study, the researcher, indeed, hits two birds with one stone by exploring the effectiveness of both strategies while at the same time comparing the results to know which strategy is more effective and then can best be used in the classroom to promote students' vocabulary knowledge level and retention.

1.7. Research questions & hypotheses

In order to achieve the objective of the study represented in exploring and comparing the influence of both semantic mapping and wordlist strategies on students' development and retention of L2 vocabulary, the researcher of this study puts for investigation the following research questions:

1- Do memory strategies represented in semantic mapping and the wordlist play a significant role in promoting students' knowledge level and retention of L2 vocabulary?

2- Which strategy has a greater influence on students' retention of L2 vocabulary: semantic mapping or wordlists?

Based on the above two research questions, the following hypotheses are anticipated by the researcher of the current study and tested by him throughout the implementation stage of the study.

a. Both strategies have a positive effect on students' development and retention of L2 vocabulary.

b. Semantic mapping is more effective than wordlists to prolong students' retention of L2 vocabulary when applied in the classroom context.

Chapter Two: Literature Review

2.1 Introduction

This chapter critically reviews the topic-related literature from both theoretical and practical perspectives. The chapter starts with a critical review of the most pertinent approaches of L2 vocabulary acquisition including the behaviorist approach, the nativist approach and the interactionist approach. This also encompasses reviewing the most influential theories stemmed from each approach; Krashen's monitor theory which emerged from the nativist approach and the three main theories stemmed from the interactionist approach: Piaget's constructivist theory, Vygotsky's social interaction theory and the information processing theory. Furthermore, examples of how new items are taught in the classroom according to each approach and theory are also provided in this chapter to show the pedagogical and practical implications of these approaches and theories on students' acquisition of L2 vocabulary, followed by a discussion of the most critical points taken against each approach and theory.

The third section of this chapter reviews what the literature says about the nature of memory and storage systems and explains how our minds operate and where our memories store information for better acquisition and longer retention of lexical items. The fourth section reviews the previous literature regarding the major factors affecting the retention of words, while the fifth section reviews the previous literature with regard to the most prominent strategies employed in the classroom to increase the vocabulary retention span, a matter which provides future potential researchers as well as language teachers with a knowledge repertoire of different techniques and strategies that make the process of L2 vocabulary teaching and learning more effective in the classroom leading to students' broader knowledge and longer retention of words.

The sixth section reviews the most significant studies conducted to investigate the influence of memory strategies in general and both semantic mapping and wordlist strategies in particular on students' development and retention of L2 vocabulary. The findings of these studies are also discussed to show the gap in the previous research and to demonstrate the significance of the current study. Finally, a summary of the above

approaches, theories and studies is provided to demonstrate the usefulness of the current study and the role of literature in extracting some values guiding the perfect implementation of the present study.

2.2. Approaches of L2 vocabulary acquisition

In the literature, linguistics and psychology are two pedagogical domains identified as the center of many approaches to explain how language functions and learning happens (Richards & Rodgers 2015). According to Randall (2007), these two domains shape the teaching methods employed by language teachers in the classroom to achieve effective L2 teaching and learning. Centered on psychology and linguistics, Randall continues to say that these approaches and methods give a special attention to the mind to know how learning occurs in addition to models of language to know how language functions. Therefore, it is important to review these approaches from two angles; theory of language and theory of language learning, to fully understand the view of proponents of these approaches towards language and language learning from both linguistic and psychological perspectives.

2.2.1. The behaviorist approach

The behaviorist approach, as founded by J.B. Watson, focuses on the importance of verbal behavior in L2 teaching and learning (Stern 2010). Its view towards language and language learning is supported by many theorists and educationalists including B.F. Skinner, Leonard Bloomfield, A.W. Staats and O.N. Mowrer among other figures in the educational world in the second half of the twentieth century (Hubbard et al. 1998). According to linguists of this approach, speech is language, and given that many languages do not have written forms, the primary function of language is oral. They argue that people learn to speak before they learn to write, and then, the priority in the classroom should be given to the spoken not the written language. According to psychologists of this approach, learning is behavior and people learn when they are exposed to external behavior in the form of stimuli or reinforcements. They argue that, the more positive influences are provided, the quicker response occurs and learning happens.

This view of learning is asserted in Skinner's work (1991) when he said that the external influence is a key factor in directing behavior and in shaping learning as a result. This association between stimuli and learning has its great contribution to enriching our knowledge with respect to understanding of how language is acquired (Randall 2007). Randall continues to say that this association makes the human mind process language automatically through the intensive practice of that language in different contexts leading to hastening of the learning process. In the same vein, Lightbown and Spada (2013) argue that the behaviorist approach sees language learning as a kind of constructing habits through imitation and intensive practice of language in different contexts resulting in deeply rooted habits for language learning. In other words, any learning outcomes are automatic reactions to particular stimuli, and there is such a thing as the human mind but it is not involved in the learning process in any way.

One of the main principles of behaviorism is that learning can happen through trial-and-error, meaning that any random or non-directed behavior conducted by people can result in their learning. To put this in other words, learning happens when the utterance, that is acceptable, is reinforced by positive rewards, and also when the unacceptable utterance is reinforced by negative rewards until it becomes acceptable in the surrounding community where people are raised.

Regarding the implementation of this view in the classroom to achieve L2 vocabulary acquisition, L2 teachers can use a word as a stimulus and ask students to give responses by extracting other meanings of the word by adding prefixes or suffixes to the word. The idea of stimulus and response can also be applied in the classroom to teach lexical items by giving central words and prompting students to provide synonyms for the given words. Furthermore, repeating and practicing of words in different contexts, as suggested by this view, have their influence on L2 vocabulary acquisition.

However, and although influential, this view of learning, as argued by Jacobson, Eggen and Kauchak (2009), is severely criticized by modern educationalists and theories for ignoring the role of mind, social influence and motivation in shaping the human learning. Moreover, Orlich et al. (2013) contends that the process of imitation and response applied through repetition and practice is itself a mental process which requires the involvement of mind in the learning process in contradiction to the

principles of this approach which purport that learning only happens through observable behavior without any mental involvement.

2.2.2. The nativist approach

This approach, as developed by Noam Chomsky, is a reaction to the behaviorist approach in which there must be an ideal listener-speaker in a natural environment for learning to happen**.** Chomsky purports that the brain is the core of learning and is not an empty space in which a special part, called the language acquisition device (LAD) or the black box, is responsible for learning the language naturally. According to linguists of this approach, language is seen as a medium to express the functional meaning (Richards & Rodgers 2015). In other words, the emphasis here is given to language meanings rather than the structural functions of language, to language competency rather than language accuracy and to the communicative dimensions rather than the structural or grammatical characteristics of language. In simple words, language is seen as a vehicle to convey language meanings through communication.

Concerning the use of black box or LAD concept in the classroom to achieve L2 vocabulary acquisition, students acquire L2 vocabulary items if exposed to the items in natural classroom settings using different contexts based on practice and repetition. To make the classroom environment natural, L2 teachers, as the main source of information according to this concept, should be responsible for selecting adequate materials and choosing proper activities that suit students' levels, skills and needs.

One of its influential theories, Krashen's Monitor Theory (MT), is reviewed in the following lines to explain its view towards how L2 vocabulary items are best acquired or learnt. This theory suggests five hypotheses which still collectively constitute the practical framework for students' current vocabulary learning strategies (VLSs). The five hypotheses include; (1) the acquisition/ learning hypothesis, (2) the monitor hypothesis, (3) the natural order hypothesis, (4) the input hypothesis, and (5) the affective filter hypothesis. However, and for the purpose of this research, only the parts of MT that are relevant to this research will be critically reviewed. This includes reviewing the following two hypotheses: the input hypothesis and the affective filter hypothesis.

2.2.2.1. Krashen's monitor theory

As stated by Richards and Rodgers (2015), this theory focuses on the exposure to rather than the practice of language and on the use of language for communication in natural settings rather than the accurate production of language. It also stresses the importance of vocabulary as being the heart of language. The input hypothesis claims that the exposure to comprehensible input leads to L2 vocabulary acquisition. Krashen (1999) defines the comprehensible input as the language that is heard or read and is a little beyond students' current levels. To put this in other words, students, on their way to acquire L2 vocabulary, should be exposed to a fair quantity of words, and such words should be authentic and slightly above students' current levels (Richards & Lockhart 2013). This hypothesis, indeed, relies heavily on the nativist approach of L2 vocabulary acquisition, in which it presupposes the existence of LAD which stores the new words in the mind leading to L2 vocabulary acquisition.

In his affective filter hypothesis, Krashen hypothesizes that the human brain has an imaginary filter consisting of self-confidence, motivation and low-anxiety. The job of this filter is to facilitate the transfer of the target items to, or prevent them from reaching the LAD. He argues that learning happens when the affective filter is reduced to minimum allowing as much information to go to the LAD as possible. This makes the reception of L2 vocabulary in the LAD more effective resulting in L2 vocabulary acquisition.

However, and despite its great contribution to analyzing and explaining how L2 vocabulary items are best acquired or learnt which is still the solid base for many contemporary theories and approaches, the nativist approach in general and Krashen's monitor theory in particular are criticized by many educationalists and scholars (e.g., McLaughlin 1995, Gregg 1984, Mitchell & Myles 2014) for drawing heavily on teaching L2 vocabulary through communication in a native-like environment and neglecting the social and cultural characteristics of language which are considered fundamental to achieve L2 vocabulary acquisition. Moreover, this approach is posed for criticism by Swain (1985) for disregarding the role of output in attaining L2 vocabulary acquisition.

2.2.3. The interactionist approach

Linguists of this approach see language as a medium for achieving and enhancing the interpersonal relations between individuals (Richards & Rodgers 2015). In other words, language is regarded as a vehicle for enhancing, developing and maintaining students' social relations as well as their social communication skills. The content of language teaching is designed to include mutual interaction tasks and activities between the interactors in the form of teacher-student or student-student interaction, and this content can be used in teaching the four basic language skills; listening, reading, speaking and writing (Richards & Rodgers 2015). This view towards language is also argued by Walsh (2011) by saying that this allows students to modify, construct and develop their language system with or without L2 teachers' assistance. Regarding its view towards language learning, psychologists of this approach see language learning from three different perspectives; Piaget's constructivist theory, Vygotsky's social interaction theory and the information processing theory. The relation between these three theories and L2 vocabulary acquisition is reviewed and discussed in the following lines.

2.2.3.1. Piaget's constructivist theory

The constructivist theory of learning as developed by Jean Piaget (1896-1980), the first theorist to apply experiments on human beings, is considered the first theory to focus on the importance of interaction for learning, in which any new knowledge has to be integrated with the inner knowledge through three processes; assimilation, accommodation and equilibration, to construct new knowledge or concepts (Pritchard, Millar & Haddock 2012). With regard to the implementation of this theory in the classroom to achieve L2 vocabulary acquisition, students should only be exposed to the lexical items that they have previous knowledge about in order for the mind to work through the above three processes to construct new meanings for the new lexical items.

2.2.3.2. Vygotsky's social interaction theory

The constructivist theory is revised by Lev Vygotsky (1896-1934) to form a new theory called the social constructivism, in which any new knowledge should go through the same three processes as suggested by Piaget, but the emphasis here is given to the social

interaction between the interactors as the best way to achieve effective teaching and learning (Pritchard, Millar & Haddock 2012). In this regard, Walsh (2006) insists that through teacher-student or student-student interaction within zone of proximal development (ZPD), students will actively be able to construct new knowledge and concepts. The term ZPD means that, students, if assisted or guided by language teachers or other students to a level slightly above their current level, will be able to acquire the target language more easily (Slavin 2015). Regarding the implementation of this theory in the classroom to achieve L2 vocabulary acquisition, students will be able to acquire L2 vocabulary items if fully involved in classroom tasks and activities and socially scaffolded within the ZPD.

2.2.3.3. The information processing theory

Attracting the attention of theorists and scholars over the last sixty years, this theory concentrates on the cognitive processing of mind (Randall 2007). Randall goes on to say that the principal idea of this theory is that the human mind works as a computer in which any new information has to be received, processed and then delivered. The theory of information processing is advocated by many scholars (e.g., Miller 2011, Randall 2007, Anderson 2015) to be applied in the classroom to achieve L2 vocabulary acquisition. They demonstrate that the mind has to go through three fundamental processes; reception, storage and retrieval of information, to facilitate the transfer of words from the sensory memory to the short-term memory to the long-term memory leading to students' broader knowledge and longer retention of L2 vocabulary as being the ultimate goal of L2 vocabulary teaching and learning.

This theory is the result of some empirical evidence from some pioneering studies concerned with the study of mind and storage systems. One of leading studies in the field is conducted by Sperling (1960) to investigate the recall of images and letters displayed for short periods, up to 50 milliseconds. The results of this study reveal that the participants are not consciously able to realize the images and letters if exposed to them for short periods, but they are clearly able to report some of them (4 to 5 out of 12 images and 3 to 4 out of 12 letters). It is concluded from this experiment that there is a temporary memory in the mind with a function of storing the sensory information

received by the sensory receptors, such as ears or eyes, for a brief period before being transferred to the short-term memory for further processing. With regard to the length of recall time, the same study discloses that the recall of information received by the sensory receptors lasts for a very short time, approximately one second, before being forgotten.

These results, according to Randall (2007), have their contribution to developing various models of information processing to explain how L2 vocabulary items are received, processed and stored in the mind to achieve L2 vocabulary acquisition. However, and as stated by Anderson (2015), the most notable and remarkable model of information processing remains that of Atkinson and Shiffrin's model (1968) in which the new information is stored in three different memories; sensory, short-term and long-term memories, through three sequential or linear stages of input-processing-output for better retention and longer retrieval of information. With regard to the implementation of this theory in the classroom context to achieve L2 vocabulary acquisition, students will be able to store the new vocabulary items in the long-term memory for longer periods and retrieve them when necessary if they learn to use certain strategies that require longer processing of new items in the mind.

A closer review of the three aforementioned theories shows that these theories, if collectively looked at, have a great contribution to explaining how L2 vocabulary items are best acquired as each theory tackles some aspects of language learning not satisfactory explained or even ignored in the other two theories. Besides, the criticism given to each theory on a theory-by-theory basis is a flesh wound that has no severe distortion of the body (Randall 2007). For example, Piaget's constructivist theory is criticized by Markee (2015) for disregarding the role of social and cultural characteristics of language in bringing about the desired learning. Likewise, the information processing theory is criticized for reducing the complexity of human mind to three linear processes (Mayer 1996) and for failing to reflect the active role of students in bringing about the desired learning (Phillips 1995). These aspects are comprehensively covered and evidently explained in Vygotsky's theory of social interaction (Slavin 2015).

In the same manner, Vygotsky' social interaction theory, although constituting the main base for many contemporary approaches and theories, is questioned for giving no analysis or explanation on how new words are processed and stored in the memory for longer retention and better retrieval of words. This analysis or explanation is considered important by Carter and McCarthy (2014) to hasten or enhance, not to ensure or confirm, students' acquisition of L2 vocabulary. Therefore, each of the above-mentioned theories is not enough per se to explain how L2 vocabulary items are best acquired, but when considered collectively, they can give an unquestionably ample explanation on how L2 vocabulary items are best acquired.

2.3. Memory and storage systems

Parle, Singh and Vasudevan (2006) define the memory as a process in which the new information is encoded, stored and retrieved. This memory is divided by Carlson et al. (2010) into three different types; sensory, short-term and long-term memories. It is also stated by McDaniel and Pressley (1989) that the biggest challenge facing L2 students in their way to acquire L2 vocabulary is not to receive new items as there are many resources available everywhere from which a repertoire of new items can be obtained or received, but is to store such items in the long-term memory as long as possible. In this regard, Carter and McCarthy (2014) argue that the process of receiving the target words by the sensory receptors and storing them in the short-term memory do not guarantee the easy retention or rich production of the target words. They emphasize the importance of the third process, the retrieval process, in promoting the easy retention and rich production of the target words. The following lines review the literature with respect to the mechanism of memory and storage systems with an ample explanation of the three processes involved.

Parle, Singh and Vasudevan (2006) define and explain the three different types of memory as follows: the sensory memory tackles the information that is perceived by the sensory receptors such as ears and eyes, and this memory is of limited capacity which cannot be enlarged or prolonged by rehearsal or practice. The short-term memory tackles the information that is not of great value for recipients and consciously or unconsciously received by them in a prompt state, and this type of memory, like the

sensory memory, is of limited capacity, but it can be prolonged or increased using the chunking technique. The chunking technique is defined by Neath and Surprenant (2007) as the use of a collection of some individual pieces of information together in a meaningful context. This technique is believed to be effective in L2 vocabulary memorization and retrieval as it creates high order cognitive representations of the words that are put together and used as an integrated group (Tulving & Craik 2005). The long-term memory deals with the information that is consciously received by recipients and is of great value for them. This type of memory, unlike the above two types of memory, is of larger and longer capacity, in which any amount of information can be stored and retained for longer periods.

Therefore, it is concluded that putting the target words in the long-term memory is a desire by language teachers to help L2 students store as many words as they can and retain them over longer periods of time. The literature also indicates earlier attempts to define and explain the above three types of memory but with the same concepts and meanings (e.g., Carlson 1990, Atkinson & Shiffrin 1968, Sperling 1963, Miller 1956). A good example of this is that people tend to remember dates of some occasions and events longer than others. For example, people are usually able to remember birth and marriage dates in comparison to other dates such as I.D. issuance and car registration dates that do not have great value for people. This happens because birth and marriage dates are usually stored in the long-term memory while the other dates are not.

2.4. Major factors affecting the retention of words

In the literature, there are many reasons why students retain and remember some lexical items better than others. For example, Gairns and Redman (2010) emphasize the influence of students' motivation and attention on longer retention of words. According to them, these factors have their influence on activating the memory to process the target words more efficiently and in an orderly manner, a matter which facilitates conveying the target words from the short-term memory to the long-term memory paving the way to longer retention of words.

Moreover, the study carried out by Khoii and Sharififar (2013) discloses that repetition and practice of words lead to longer memorization of such words. According

to this study, the long-term memory is apparently inexhaustible and can store any amount of information if repeated in meaningful contexts by L2 teachers and exercised by L2 students. Furthermore, the study conducted by Nilforoushan (2012) reveals that the previous knowledge or background about the target words is fundamental to prolong the retention of words. According to this study, the inner meanings connect with the outer meaning to facilitate constructing and storing new meanings in the mind for longer periods.

Additionally, and according to the study conducted by Mehrpour (2008), understanding of word meanings helps students develop and retain the target words longer. It is concluded from this study that giving an explanation of the target words in the target language or a translation of their meanings in the first language activates the memory to store the target words in the long-term memory. Finally, Gu and Johnson (1996) refer to the importance of the teaching strategies used by L2 teachers in promoting or demoting longer retention of words. They give a list of strategies that can be used by language teachers in the classroom to help students remember L2 vocabulary items longer. These strategies are listed, classified and discussed more elaborately in the following section.

To summarize this section, there are many factors why students are able to remember some lexical items longer than others. These factors include students' motivation towards learning the target words and their attention in the classroom settings, the amount of repeating or practicing of words in the classroom, students' previous knowledge of the learnt words and students' understanding of word meanings. These factors among others have to be taken into account by language teachers when they teach new lexical items in the classroom for longer memorization and better retrieval of L2 vocabulary items.

2.5. Strategies to prolong vocabulary retention span

Many strategies are suggested in the literature to be used in the classroom to increase students' retention span of L2 vocabulary. These strategies are listed and categorized by Gu and Johnson (1996) into cognitive strategies, meta-cognitive strategies, activation strategies and memory strategies. According to them, the cognitive strategies are tools

used to tackle the cognitive behavior or the intellectual activity. To simplify this, the cognitive strategies are those used to teach students how to learn, and the most significant strategies of which are those listed by O'Malley and Chamot (2002) as follows: note taking, repetition, inference, transfer, translation, resourcing, grouping, deduction, elaboration, contextualization, keyword, auditory representation, imagery and recombination.

According to Gu and Johnson, the meta-cognitive strategies are those created by students' self-initiation or selective attention. In other words, any strategy practiced by successful students can be classified into and considered as meta-cognitive strategies. This definition also entails that successful students have to be good at selecting the words that are frequently used and significantly useful and also good at skipping those infrequently used or the technical words that do not affect the overall comprehension of the meaning of a passage if they rely on selecting the new items from different reading passages.

Gu and Johnson go on to define the activation strategies as those strategies in which students use the target words in different contexts. In other words, the activation strategies draw heavily on the use of different meanings of one word in different contexts, a matter which facilitates transferring the target words from the short-term memory to the long-term memory. These strategies revolve around activating the mind by providing students with a list of words, and then, students use the different meanings of these words to write sentences in different contexts.

Eventually, the memory strategies, which are the main focus of the present study, are defined by Gu and Johnson as those used to help the retention of words. According to Schmitt (2011), those strategies use images or create links or networks of interrelated words sketched or drawn on boards or in notebooks or even formed in the mind to assist the retention of words. These strategies are classified by Gu and Johnson (1996) into two categories; encoding strategies and rehearsal strategies. According to them, the encoding strategies include semantic mapping, contextual encoding, association, imagery, visual, auditory as well as word-structure, while wordlists and memorization by repetition are examples of the rehearsal strategies. The researcher of the present study aims at comparing one of the encoding strategies, semantic mapping,

to one of the rehearsal strategies, the wordlist strategy, to know which one has a greater effect on students' retention of words.

2.6. Empirical studies in the field

In the literature, many studies, including the ones carried out by Nemati (2009), Ghorbani and Riabi (2011) and Nemati (2013), investigated the influence of memory strategies on storing the new words in the long-term memory. The results of these studies revealed that students who employed the memory strategies outperformed those who employed other vocabulary learning strategies on the delayed post-test only. The researchers of these studies concluded that applying the memory strategies in the classroom helps students increase their vocabulary retention. According to them, the memory strategies require high levels of information processing, a matter which facilitate the transfer of the learnt words from the short-term memory to the long-term memory leading to longer memorization of words.

The study conducted by Parle, Singh and Vasudevan (2006) was more specific to investigate the influence of one type of memory strategies, the rehearsal strategies, on memory storage capacity and retention of information. The findings of this study revealed a significant difference in students' memory storage capacity and retention over a period of eighteen days after they are instructed in the regular rehearsal strategy in the classroom. The study suggested the use of repeated rehearsals at regular periods to enlarge students' memory storage capacity and prolong their retention of the information being learnt. To achieve effective use of the regular rehearsal in the classroom context, students, according to this study, have to repeatedly practice the target words to enhance their awareness of, and familiarity with, the target words leading to larger storage capacity and longer retention of the target words in the mind of students.

In like manner, many studies were conducted to investigate the influence of the other type of memory strategies, the encoding strategies, on students' development and retention of L2 vocabulary including the one carried out by Radwan and Rikala-Boyer (2011), in which the researchers examined the influence of semantic mapping on students' recognition and production of L2 vocabulary over time. The results showed a

great development in students' vocabulary knowledge. This development, however, was statistically significant only in recognition activities and tasks. To achieve effective use of semantic mapping in the classroom, students, according to this study, have to be exposed to the target words by creating a connection between the already existent words and the target words by drawing some maps or diagrams in the form of some connected circles or lines leading to greater improvement and longer retention of the target words.

The literature indicates the scarcity of research in a critical area related to the best memory strategy that can be used to maximize students' development and retention of L2 vocabulary. To the best of the researcher's knowledge, the only attempt to investigate the effects of two memory strategies on students' development and retention of L2 vocabulary was the study conducted by Khoii and Sharififar (2013), in which two memory strategies, memorization by repetition and semantic mapping, were examined to discover their influence on students' development and retention of L2 vocabulary. The results showed a big difference in students' knowledge kevel of the target words before and after the experiment. This difference, however, was not statistically significant for both control and experimental groups. It was then concluded that both strategies will bring about the same effect on students' development and retention of words if either of them is applied in the classroom context.

Given the scarcity of research on the best memory strategy that can be used to maximize students' development and retention of words, the researcher of this study has decided to dig deep into this critical issue and investigate the influence of two memory strategies, semantic mapping and the wordlist, on students' development of L2 vocabulary. He has also decided to go further in his research and compare the results to know which strategy has a greater influence on students' retention of L2 vocabulary. By doing so, the researcher of the present study wants to reach a clear-cut conclusion on which strategy is more effective to maximize students' development and retention of L2 words when applied in the classroom context.

2.7. Summary

This chapter reviews the most pertinent approaches and theories of L2 vocabulary acquisition and highlights the most significant studies conducted to investigate the

effects of memory strategies on L2 vocabulary development and retention. The aim is to demonstrate the influence of memory strategies, represented in semantic mapping and the wordlist, on L2 vocabulary development and retention from both theoretical and practical perspectives. The results of the above literature review reveal strong recommendations by both theorists and researchers towards the use of these two strategies in the classroom to develop students' vocabulary knowledge level and prolong their retention of words. It is also concluded from the above literature that research on the best memory strategy that can be used to facilitate the transfer of lexical items from the short-term memory to the long-term memory is very scarce. Here come the role and significance of the present study to add to the literature in this critical area not by reinventing the wheel but by building on the existing research.

Chapter Three: Methodology

3.1. Introduction

This chapter presents the current research approaches, methods and tools adopted to investigate the research questions mentioned in the first chapter of this research. The researcher starts this chapter with a time plan of the research represented in a Gantt chart, followed by an explanation of the purpose and design of the present research. Adding to this, the researcher sheds light on the research context encompassing participants, teachers and sites. In this chapter, he also identifies the materials and tools used for the investigation, explains how the treatment is conducted and highlights some issues that may impede the successful implementation or completion of the current research.

3.2. Research timetable

Below is a Gantt chart of the research timetable which displays the chronological stages and development of the current research (Denicolo & Becker 2012).

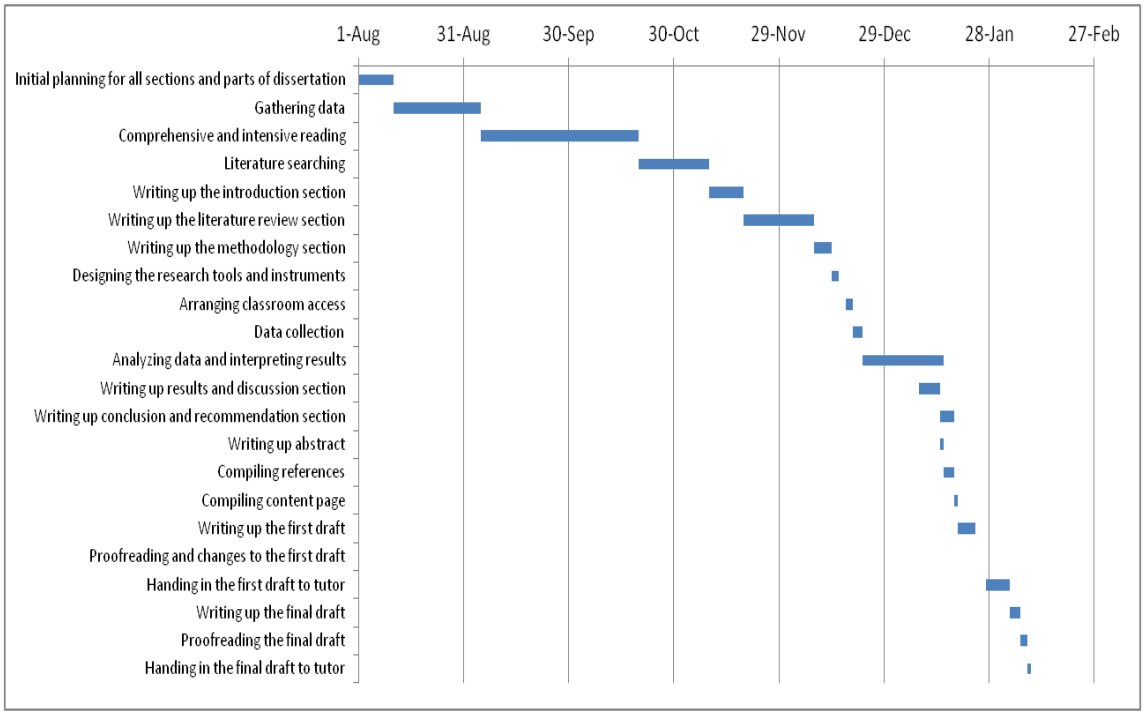

Figure 3: Chronological development of the research

3.3. Research purpose and design

The purpose of this research was to investigate the effects of two memory strategies, semantic mapping and wordlist strategies, on students' development and retention of L2 vocabulary. It also aimed at identifying which strategy can best be applied in the classroom to enhance longer processing of information in students' mind leading to longer retention of L2 vocabulary items. The researcher, in doing so, adopted the experimental method, which is a type of quantitative research approach as categorized by Gall, Gall and Borg (2007) and Creswell (2014), to address the research questions. The researcher decided to choose the experimental method because he thought it is the best to test the influence of a treatment on students' outcome. The benefit of using the experimental method as argued by Johnson and Christensen (2016) was to collect accurate numerical data about the subject matter of the research, resulting in a deep analysis of factual and concrete data (Walliman 2009).

3.4. Research context

Four ESL classes, 10^{th} graders, constituting a total of 60 participants divided into two halves, 30 male and 30 female and aged between 15 and 16 years old, were randomly chosen to be the main sample of the research. The four ESL classes were also arbitrarily chosen from two well-reputed international private schools providing both British and Arabic curricula in their classes and located in two different Emirates in UAE, Dubai and Sharjah Emirates. The first two classes, equally divided into two halves, 15 males and 15 females, were chosen in a random manner from Dubai International Private School located in Dubai Emirates. In like manner, the other two classes, equally divided into two halves 15 males and 15 females, were randomly chosen from Sharjah International Private School located in Sharjah Emirates.

Furthermore, one class from each school was selected arbitrarily to be the experimental group and instructed in semantic mapping strategy while the other class was arbitrarily selected to be the control group and assigned the wordlist strategy. To easily refer to the classes in the following chapters, the experimental groups from both research sites were named 10ED and 10ES respectively, while the control groups from both research sites were named 10CD and 10CS respectively. The reason for using two

different locations to be the research sites was to establish concrete evidence of the effects of semantic mapping and wordlist strategies on students' development and retention of L2 vocabulary in the UAE context.

All participants were studying the new items for the purpose of this research during the first semester of the academic year 2016-2017. Additionally, they have been studying English as a second language for almost 13 years in the same schools. Therefore, it was expected for them to, at least, perform the experimental tasks perfectly. It was also expected that their proficiency level of English as a second language was not identical, but and most importantly, their low level of the target words under investigation was assured the same prior to the experiment. The participants at the first research site were instructed in the new items by one teacher and the same applied for the participants at the second research site to enhance the integrity and reliability of results at both research sites.

From their profile, both schools hire non-native English teachers with at least six-year experience in the field and a score certificate of 7.0 in the IELTS exam to teach English as a second language in their classes. They also admit students from various orientations and different nationalities to study different academic subjects approved by the UAE Ministry of Education including English for speakers of other languages (ESOL). Furthermore, they provide new facilities and using modern technologies in their classrooms to enhance the process of teaching and learning.

3.5. Materials and instruments

Forty words characterized as low-frequency and taken from reading passages in the students' course book, "*Cambridge IGCSE English as a Second Language*", Lucantoni, (4^{th} ed., 2014), were selected to be the research materials. These words were selected by the class teachers, and then tested by a pre-test to ascertain whether the participants have the same low level of these words to assure their homogeneity prior to the experiment. After the participants' homogeneity was assured by the pre-test, the target words were used by the researcher to be the materials of this research regardless of their usefulness to the students because of the limited time allocated for the researcher in addition to the limited access to both research sites, a total of five-day access to conduct

the treatment and administer the necessary tests as permitted by the school principals. The forty target words were selected from the reading passages in the first unit entitled "focus on reading skills", pages 7-19, as annexed in the appendix (A) to this research.

Regarding the research instruments, two multiple-choice tests were administered to gather the research data. The first test was run prior to the experiment to ascertain whether the participants have the same low level of the target items prior to the experiment to assure their homogeneity while the other test was administered at the end of the experiment to explore the influence of semantic mapping and wordlist strategies on participants' vocabulary development and retention over a six-week period. These types of test formats, the multiple-choice formats, were specifically chosen for this experiment as the main focus of the research was given to word recognition rather than word production.

3.6. Treatment

The pre-test was administered for the four ESL classes, 10ED, 10ES, 10CD and 10CS, prior to the experiment to ascertain whether the participants have the same low level of the target words prior to the treatment, the content of the pretest was annexed in the appendix (B) to this research. After the answer sheets of the pre-test were collected and the participants' homogeneity was assured, both experimental and control groups were taught the forty target vocabulary items using semantic mapping strategy for 10ED and 10ES classes and the wordlist strategy for 10CD and 10CS classes to explore their influence on students' development and retention of the new items over a six-week period. The forty target words were re-instructed the following two days, a total of three times, by the same teachers using the same strategies to make sure that the new items were well-constructed in the participants' minds.

During the three sessions allocated for 10ED and 10ES classes, some students were first assigned by the class teacher to read the target passage loudly. The new topic-related words marked as low-frequency were written on the board by the class teacher as soon as the students were exposed to them. The students were, then, asked by the class teacher to give other words similar, close in meaning or related to the words written on the board. The role of the class teacher here was to select the correct answers

given by the students and write them on the board and to encourage the students who gave wrong answers to think carefully for other correct answers. One more role played by the class teacher was to draw lines or make connections between the target words and the other correct words given by the students. The remaining time of the session was exploited and consumed in doing comprehension-related tasks and activities. However, the participants were not assigned or requested to do any topic-related assignments at home.

During the three sessions allocated for 10CD and 10CS classes, some students were first assigned by the class teacher to read the target passage loudly. The new words typified as low-frequency were listed on the board by the class teacher as soon as the students were exposed to them. The students were, then, asked by the class teacher to give an explanation for each word on the board in the target language; the English language. The role of the class teacher here was to give feedback and comments on students' answers. The remaining time of the class was also used to do some comprehension-related exercises and activities. The students, however, were not assigned or requested to do any topic-related homework.

Six weeks later, the same test was re-administered for all classes to investigate the influence of employing both semantic mapping and wordlists on participants' vocabulary development and retention but with the content of the test re-organized in a bid to remove any concerns related to students' traditional habit of memorizing the content of tests as a major strategy used by students at different educational levels, the content of the post-test was annexed in the appendix (C) to this research. Another test was run three days after the post-test, a total of three tests, to enhance the reliability of the results. The results from both the pre-test and the post-test were then carefully analyzed and critically discussed as shown in the following chapter of this research.

3.7. Some issues anticipated by the researcher

3.7.1. Validity, reliability and objectivity issues

Many strategies were used to establish the validity of the experimental study's findings and tools, one of which was to review the results and the content of the tools by an external reviewer (Creswell 2014). Therefore, all comments and suggestions given by

the external reviewer were discussed and then inserted in the final draft of the research. To make the results and tools of the research more valid, the target words were taught by the same class teachers throughout the three teaching sessions, and the content of the post-test was the same as the pre-test but with the content re-ordered as mentioned in the above section.

In like manner, many strategies were used to investigate the reliability of the experimental study's findings, one of which was to obtain the same or similar answers or results repeatedly (Creswell 2014). To achieve this, another test was administered three days after the post-test, and the results of this test were compared with that of the post-test to see if there were any significant changes in participants' answers. It was expected by the researcher that the participants will learn from the post-test especially when the delayed post-test was administered only three days after the post-test. However, the researcher decided to run the delayed post-test at this particular time because the students, or in our case the participants, were approaching the end of the first semester of the academic year 2016-2017, and therefore, the time was against the researcher to extend the period between the post-test and the delayed post-test. To make the study's results more reliable, no prior notifications were given to the participants, the answer sheets of the pre-test were not handed in to the participants, and the same test time and scoring system were also used. To easily calculate the participants' answers, each correct answer was given one mark and each incorrect answer was given zero.

Finally, the researcher of this study was aware of the importance of distancing himself from teaching the target words in the classes under investigation to enhance the objectivity of the research. Therefore, the researcher, instead, instructed the class teachers on how to properly and effectively apply both strategies in the classrooms under investigation to avoid any objectivity-related issues. Here came the importance of paying visits to the class teachers before conducting the treatment to ensure the successful employment of both strategies in the classes under investigation.

3.7.2. Ethical issues

Ethical issues related to the research sites, teachers and participants were anticipated as always done when conducting any scholarly research (Hesse-Biber & Leavy 2011). The researcher of the current study was aware of the importance of respecting and protecting his research sites, teachers and participants. He was also keen on gaining all necessary approvals from both research sites' representatives and officials, appreciating both teachers and students' privacy and avoiding the misuse of any information whatsoever as gained or obtained from the class teachers and/or the participants during or after collecting the research data. In this regard, the researcher of the present study took it upon himself to avoid bias when collecting the research data and to disclose or explain the main purpose of the research whenever he is asked to do so. All these ethical issues were considered by the researcher of this study to promote the integrity of the research.

3.7.3. Feasibility-related issues

For the successful conduct of his research, the researcher was aware of some critical issues that would hinder the successful completion of the research and would have to be tackled during the preparation stage and before the actual work on the research. These issues included time and resource constraints and any other technical, financial, family and health issues that would hinder or prevent the research from being completed at any point. Therefore, it was important for the researcher to take the right decision about these issues at the beginning of the preparation stage or shortly after the actual work on the research to ensure the successful completion of the research on time.

3.7.4. Access and entry issues

The researcher understood that having a letter stamped from the educational and academic bodies is not sufficient per se to open the closed doors to conduct his research at both research sites. Therefore, the researcher believed that it would be useful to have a meeting with the school principals and official representatives to remove any concerns related to the misuse of results or data collected from the research sites.

In addition, the researcher was aware that he would be deemed an intruder if the class teachers and students looked at him as a stranger who is trying to break or violate

their privacy, a matter which would adversely affect the results of the research and would raise the validity issue. Therefore, the researcher believed that it would be useful to build a good relation with the class teachers and students to remove any embarrassment or fears caused by his presence in the classes under investigation. Consequently, the researcher planned to pay at least two visits to the research sites before carrying out the treatment to get to know the class teachers and students while at the same time instructing the class teachers on how to best employ the two strategies under investigation, as highlighted in the first point of this section.

3.7.5. Concluding remarks

The main purpose of this research was to find out and analyze the influence of two memory strategies on students' development and retention of L2 vocabulary with the aim of reaching a conclusion on the best memory strategy that can be used in the classroom to prolong students' retention of L2 vocabulary. During the implementation stage of the research, the researcher adopted the quantitative approach and used the experimental study as a research method. The tools of this research were three tests in the form of pre-test, post-test and delayed post-test. Furthermore, the researcher in this chapter anticipated some other issues that would impede or hinder the successful implementation or completion of the research if they were not taken into account during the preparation stage or shortly after the actual work on this research, and these issues included validity, reliability, objectivity, feasibility, ethics, and access as well as entry issues.

Chapter Four: Findings & Discussion

4.1. Introduction

A comprehensive exploration of the influence of semantic mapping and wordlist strategies on students' development and retention of L2 vocabulary items forms the main body of this chapter. This includes a deep analysis and critical discussion of the data collected from both research sites located in Dubai and Sharjah Emirates respectively. The data collected from both research sites is analyzed separately and presented in figures to give an elaborate illustration of students' knowledge level of the target words at the outset of the experiment and after the experiment is conducted. The results of both research sites are then compared in the discussion section to give clear-cut answers to the research questions and to confirm or reject the research hypotheses mentioned in the first chapter of this research. The discussion section also explains in what way the current research results agree or disagree with the results of previous research in the field.

4.2. Data analysis of the first research site

4.2.1. Both groups' knowledge level of the target words before the experiment

To ascertain whether both experimental and control groups have the same low level of the target words before the study, a pre-test in a multiple-choice format is administered. The data taken from the pre-test is analyzed using two different tools; the descriptive statistics tool to explore the difference in participants' knowledge level of the target words prior to the experiment by measuring the difference in their mean scores, and the independent-samples t-test tool to check whether the difference is statistically significant. No statistical difference in the mean scores of both groups means that both groups have the same knowledge level of the target words at the beginning of the study to a significant degree. The results of the data analysis are presented in the following figures:

Experimental Group		*Control Group*	
Mean	3	Mean	2.4
Standard Error	0.457738	Standard Error	0.411733
Median	3	Median	2
Mode	2	Mode	2
Standard Deviation	1.772811	Standard Devi	1.594634
Sample Variance	3.142857	Sample Varian	2.542857
Kurtosis	-1.01017	Kurtosis	-0.72839
Skewness	0.088753	Skewness	0.209757
Range	6	Range	5
Minimum	0	Minimum	0
Maximum	6	Maximum	5
Sum	45	Sum	36
Count	15	Count	15

Figure 4: Descriptive statistics of both groups' mean scores on the pre-test

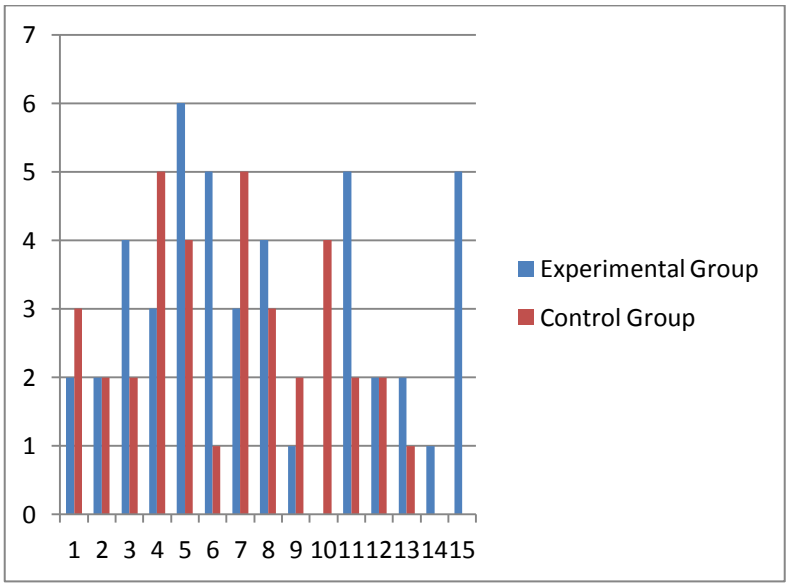

Figure 5: Experimental and control groups on the pre-test

As illustrated in the above two figures, the mean score of the experimental group is 3.0 (N = 15 & M = 3.0 & SD = 1.77) and the mean score of the control group is 2.4 (N = 15 & M = 2.4 & SD = 1.59). The result shows that there is no big difference in both groups' mean score (0.6). This means that both groups have the same low level of the target words prior to the experiment.

t-Test: Two-Sample Assuming Equal Variances

	Experimental	*Control Group*
Mean	3	2.4
Variance	3.142857	2.542857
Observations	15	15
Pooled Varianc	2.842857	
Hypothesized M	0	
df	28	
t Stat	0.974551	
P(T<=t) one-tai	0.169064	
t Critical one-ta	1.701131	
P(T<=t) two-tai	0.338128	
t Critical two-ta	2.048407	

t-Test: Two-Sample Assuming Unequal Variances

	Experimental	*Control Group*
Mean	3	2.4
Variance	3.142857	2.542857
Observations	15	15
Hypothesized M	0	
df	28	
t Stat	0.974551	
P(T<=t) one-tail	0.169064	
t Critical one-tai	1.701131	
P(T<=t) two-tail	0.338128	
t Critical two-tai	2.048407	

Figure 6: Independent-samples t-test of the difference of the mean scores on the pre-test

As displayed in the above figure, the difference in the mean scores of both groups when equal and unequal variances are assumed is identified at 0.33 (P-value = 0.33 & T-value = 0.97 when both equal and unequal variances are assumed). When the statistical significance of mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.33) indicates no statistical significance. This means that both groups statistically enjoy the same low level of the target words at the outset of the experiment to a significant degree.

4.2.2. A comparison of vocabulary knowledge level within the experimental group before and after the experiment

The mean scores of the experimental group on the pre-test and the post-test are compared using the descriptive statistics tool to investigate the development in students' knowledge level of the target words within the experimental group over a six-week period which is the period of the experiment. The big difference in the mean scores indicates a considerable development in students' vocabulary knowledge after semantic mapping strategy is employed. The results are also compared using ANOVA to ascertain whether the difference in the mean scores is statistically significant. The statistical significance means a significant development in students' vocabulary knowledge level after semantic mapping is employed in the classrooms.

Before		*After*	
Mean	3	Mean	18.53333
Standard Error	0.457738	Standard Error	1.542622
Median	3	Median	18
Mode	2	Mode	14
Standard Deviation	1.772811	Standard Deviatio	5.974549
Sample Variance	3.142857	Sample Variance	35.69524
Kurtosis	-1.01017	Kurtosis	-1.15072
Skewness	0.088753	Skewness	0.245074
Range	6	Range	19
Minimum	0	Minimum	10
Maximum	6	Maximum	29
Sum	45	Sum	278
Count	15	Count	15

Figure 7: The difference in the experimental group's mean score on the pre-test and the post-test

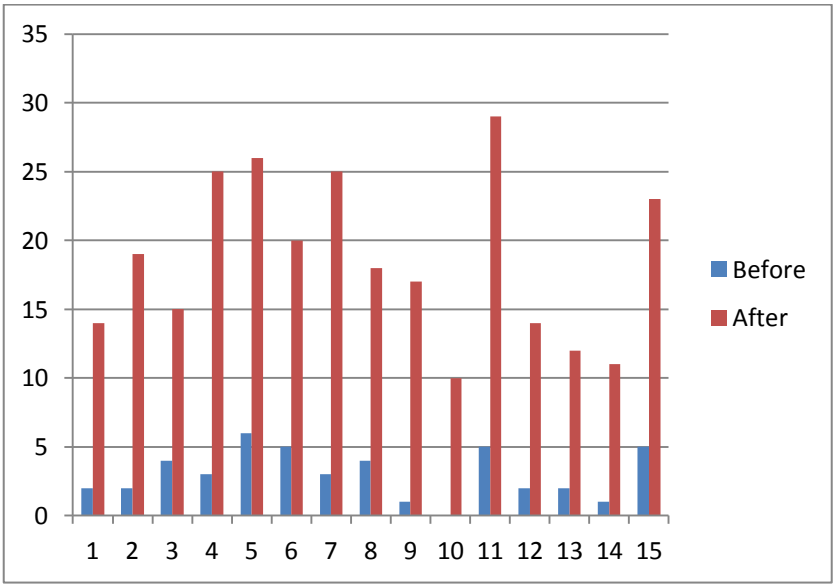

Figure 8: The experimental group before and after the experiment

As elaborated in the above two figures, the mean score of the experimental group at the beginning of the experiment is 3 (N = 15 & M = 3 & SD = 1.77), and the mean score of the experimental group at the end of the experiment is 18.5 (N = 15 & M

= 18.5 & SD = 5.97). This shows a big difference in students' knowledge level of the target words before and after the experiment (15.5). This suggests the use of semantic mapping in the classroom to promote students' knowledge level of L2 vocabulary.

SUMMARY OUTPUT								
Regression Statistics								
Multiple F	0.741818							
R Square	0.550293							
Adjusted I	0.515701							
Standard E	1.233728							
Observati	15							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regressio	1	24.21291	24.21291	15.90774251	0.001545			
Residual	13	19.78709	1.522084					
Total	14	44						
	Coefficients	*ndard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-1.07951	1.071286	-1.00768	0.331998828	-3.39388	1.234864194	-3.39388	1.234864
After	0.220117	0.055189	3.988451	0.00154533	0.100889	0.339345313	0.100889	0.339345

Figure 9: Pre-test and post-test analysis for the experimental group by ANOVA

The results of the above figure shows that the difference in the mean scores of the experimental group before and after the experiment using ANOVA is identified at 0.00 (P-value = 0.00 & T-value = 3.98). When the statistical significance of the mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.00) indicates a statistical significance. Therefore, the results indicate a statistical development in vocabulary knowledge level before and after the experiment to a significant degree.

4.2.3. A comparison of vocabulary knowledge level within the control group before and after the experiment

The mean scores of the control group on both the pre-test and the post-test are compared using the descriptive statistics tool to investigate the development in students' knowledge level of the target words within the control group over a six-week period

which is the period of the experiment. The big difference in the mean scores indicates a considerable development in students' vocabulary knowledge after the wordlist strategy is employed. The results are also compared using ANOVA to ascertain whether the difference in the mean scores is statistically significant. The statistical significance means a significant development in students' vocabulary knowledge level.

Before		*After*	
Mean	2.4	Mean	14.73333
Standard Error	0.411733	Standard Error	0.795623
Median	2	Median	14
Mode	2	Mode	17
Standard Deviation	1.594634	Standard Deviat	3.081434
Sample Variance	2.542857	Sample Variance	9.495238
Kurtosis	-0.72839	Kurtosis	-1.44334
Skewness	0.209757	Skewness	0.018679
Range	5	Range	9
Minimum	0	Minimum	10
Maximum	5	Maximum	19
Sum	36	Sum	221
Count	15	Count	15

Figure 10: The difference in the control group's mean score on the pre-test and the post-test

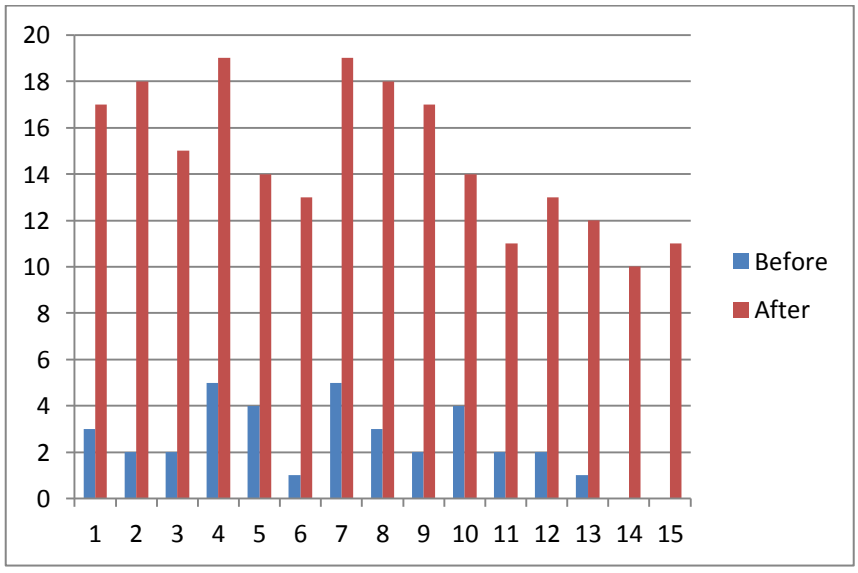

Figure 11: The control group before and after the experiment

As illustrated in the above two figures, the mean score of the control group at the beginning of the experiment is 2.4 (N = 15 & M = 2.4 & SD = 1.59), and the mean score of the experimental group at the end of the experiment is 14.7 (N = 15 & M = 14.7 & SD = 3.08). This shows a big difference in students' knowledge level of the target words before and after the experiment (12.3). This suggests the use of wordlists in the classroom to promote students' knowledge level of L2 vocabulary.

SUMMARY OUTPUT								
Regression Statistics								
Multiple F	0.721007							
R Square	0.519852							
Adjusted I	0.482917							
Standard I	1.146677							
Observati	15							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regressio	1	18.50672	18.50672	14.07496773	0.00242			
Residual	13	17.09328	1.314868					
Total	14	35.6						
	Coefficients	*andard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-3.09729	1.494907	-2.0719	0.058728041	-6.32684	0.13225877	-6.32684	0.132259
After	0.373119	0.099454	3.751662	0.002419812	0.158261	0.587977564	0.158261	0.587978

Figure 12: Pre-test and post-test analysis for the control group by ANOVA

The results of the above figure shows that the difference in the mean scores of the control group before and after the experiment using ANOVA is identified at 0.00 (P-value = 0.00 & T-value = 3.75). When the statistical significance of the mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.00) indicates a statistical significance. Therefore, the results indicate a statistical development in vocabulary knowledge level before and after the experiment to a significant degree.

4.2.4. The difference in both groups' retention of the target words at the end of the experiment

The data taken from the post-test is analyzed using two different tools to investigate the development in both groups' retention of the target words at the end of the experiment;

the descriptive statistics tool and the independent-samples t-test tool. The first tool is used to investigate the difference in the mean score of both groups at the end of the experiment. The big difference in the mean scores indicates a remarkable variation in both groups' retention of the target words after both strategies are employed in the classroom. The other tool, which is the independent-samples t-test tool, is used to check whether the difference is statistically significant. The statistical significance indicates a significant difference in both groups' retention of the target words after both strategies are employed.

Experimental		*Control*	
Mean	18.53333	Mean	14.73333
Standard Error	1.542622	Standard Error	0.795623
Median	18	Median	14
Mode	14	Mode	17
Standard Deviatio	5.974549	Standard Deviat	3.081434
Sample Variance	35.69524	Sample Varianc	9.495238
Kurtosis	-1.15072	Kurtosis	-1.44334
Skewness	0.245074	Skewness	0.018679
Range	19	Range	9
Minimum	10	Minimum	10
Maximum	29	Maximum	19
Sum	278	Sum	221
Count	15	Count	15

Figure 13: Descriptive statistics of both groups' mean scores on the post-test

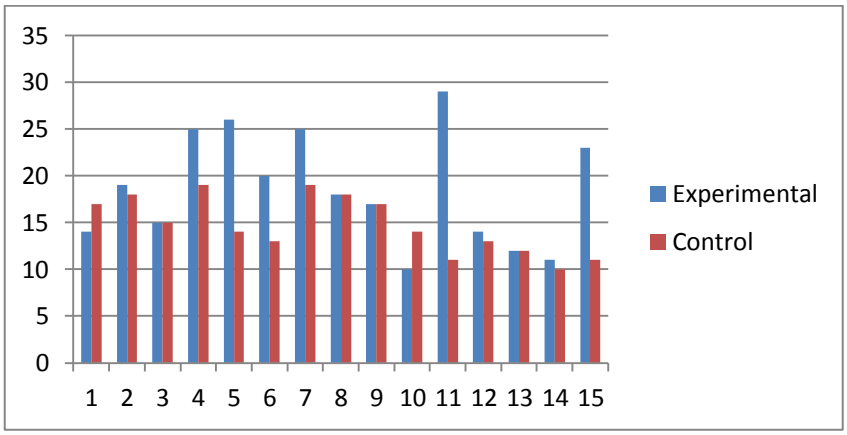

Figure 14: The experimental and control groups after the experiment

As shown in the above two figures, the mean score of the experimental group after the experiment is 18.5 (N= 15 & M = 18.5 & SD = 5.97), and the mean score of the control group after the experiment is 14.7 (N = 15 & M = 14.7 & SD = 3.08). This

result shows a big difference in students' mean scores after both strategies are employed in the classroom (3.8). This result indicates that semantic mapping as a vocabulary teaching strategy has a greater effect on students' retention of L2 vocabulary over time than does the wordlist over the same time.

t-Test: Two-Sample Assuming Equal Variances					t-Test: Two-Sample Assuming Unequal Variances				
	Experimenta	*Control*				*Experimenta*	*Control*		
Mean	18.53333	14.73333			Mean	18.53333	14.73333		
Variance	35.69524	9.495238			Variance	35.69524	9.495238		
Observati	15	15			Observati	15	15		
Pooled Va	22.59524				Hypothesi	0			
Hypothesi	0				df	21			
df	28				t Stat	2.189302			
t Stat	2.189302				P(T<=t) on	0.020005			
P(T<=t) on	0.018536				t Critical o	1.720743			
t Critical o	1.701131				P(T<=t) tw	0.04001			
P(T<=t) tw	0.037072				t Critical tv	2.079614			
t Critical tv	2.048407								

Figure 15: Independent-samples t-test of the difference of the mean scores on the post-test

As shown in the above figure, the difference in the mean scores of both groups when equal and unequal variances are assumed is identified at 0.03 and 0.04 respectively and T-value is identified at 2.18 when both equal and unequal variances are assumed. When the statistical significance of mean scores is set at 0.05 or lower (P <= 0.05), this means that the above values (0.03 & 0.04) indicate a statistical significance in both groups' mean scores. This means that there is a significant difference in both groups' retention of words over a six-week period. This result suggests the superiority of semantic mapping over wordlists in the classrooms for longer retention of L2 vocabulary.

4.3. Data analysis of the second research site

4.3.1. Participants' knowledge level of the target words before the experiment

The same content of the pre-test and the data analysis tools used to collect and analyze the data of the first research site are used to gather and analyze the data of the second research site to investigate the difference in both groups' knowledge level of the target words at the beginning of the experiment and to check whether the difference is statistically significant.

Experimental Group		*Control Group*	
Mean	2.933333	Mean	2.4
Standard Error	0.419372	Standard Error	0.349149
Median	3	Median	2
Mode	2	Mode	2
Standard Deviation	1.624221	Standard Deviatic	1.352247
Sample Variance	2.638095	Sample Variance	1.828571
Kurtosis	-0.79886	Kurtosis	-0.03155
Skewness	0.584562	Skewness	0.943942
Range	5	Range	4
Minimum	1	Minimum	1
Maximum	6	Maximum	5
Sum	44	Sum	36
Count	15	Count	15

Figure 16: Descriptive statistics of both groups' mean scores on the pre-test

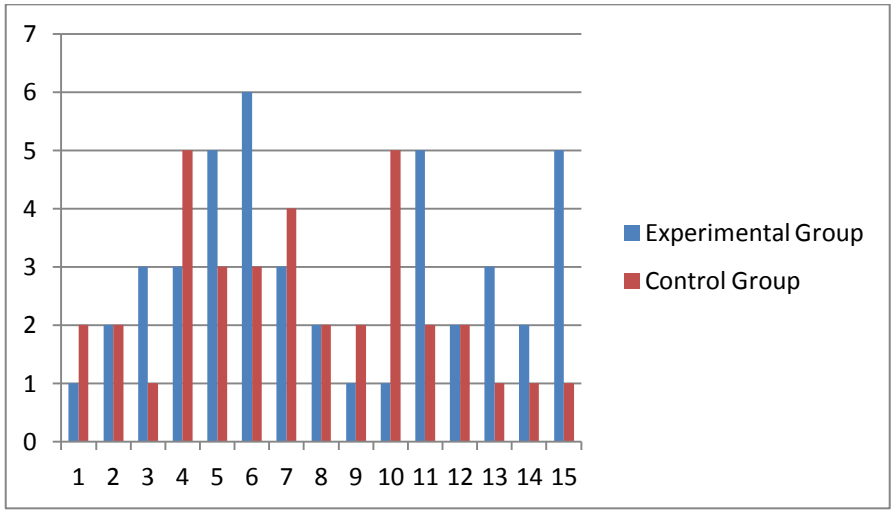

Figure 17: The experimental and control groups before the experiment

As illustrated in the above two figures, the mean score of the experimental group is 2.9 (N = 15 & M = 2.9 & SD = 1.62) and the mean score of the control group is 2.4 (N = 15 & M = 2.4 & SD = 1.35). The result shows that there is no big difference in both groups' mean score (0.5). This means that both groups have the same low level of the target words at the outset of the experiment.

t-Test: Two-Sample Assuming Equal Variances

	Experimental G	*ntrol Group*
Mean	2.933333	2.4
Variance	2.638095	1.828571
Observati	15	15
Pooled Va	2.233333	
Hypothesi	0	
df	28	
t Stat	0.977356	
P(T<=t) on	0.168381	
t Critical o	1.701131	
P(T<=t) tw	0.336762	
t Critical t	2.048407	

t-Test: Two-Sample Assuming Unequal Variances

	Experimental G	*ntrol Group*
Mean	2.933333	2.4
Variance	2.638095	1.8286
Observati	15	15
Hypothesi	0	
df	27	
t Stat	0.977356	
P(T<=t) on	0.168535	
t Critical o	1.703288	
P(T<=t) tw	0.33707	
t Critical t	2.05183	

Figure 18: Independent-samples t-test of the difference in both groups' mean scores on the pre-test

As demonstrated in the above figure, the difference in the mean scores of both groups when equal and unequal variances are assumed is identified at 0.33 (P-value = 0.33 & T-value = 0.97). When the statistical significance of mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.33) indicates no statistical significance. This means that both groups statistically enjoy the same low level of the target words at the outset of the experiment to a significant degree.

4.3.2. A comparison of vocabulary knowledge level within the experimental group before and after the experiment

The same comparison applied to the participants at the first research site is applied to the participants at the second research site using the same two data analysis tools, the descriptive statistics tool and ANOVA. The first tool is used to investigate the

difference in the mean scores of this group before and after the experiment while the other tool is used to check whether the difference is statistically significant or not.

Before		*After*	
Mean	2.933333	Mean	18.46667
Standard Error	0.419372	Standard Error	1.498783
Median	3	Median	17
Mode	2	Mode	25
Standard Deviat	1.624221	Standard Deviat	5.80476
Sample Varianc	2.638095	Sample Varianc	33.69524
Kurtosis	-0.79886	Kurtosis	-1.2798
Skewness	0.584562	Skewness	0.381363
Range	5	Range	18
Minimum	1	Minimum	11
Maximum	6	Maximum	29
Sum	44	Sum	277
Count	15	Count	15

Figure 19: The difference in the experimental group's mean score on the pre-test and the post-test

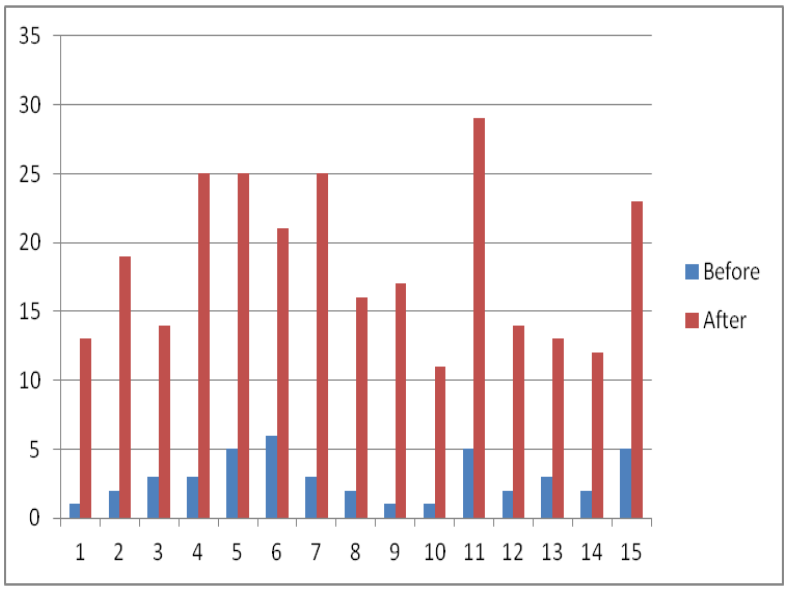

Figure 20: The experimental group before and after the experiment

As illustrated in the above two figures, the mean score of the experimental group at the outset of the experiment is 2.9 (N = 15 & M = 2.9 & SD = 1.62), and the mean score of the experimental group after the experiment is conducted is 18.4 (N = 15 & M = 18.4 & SD = 5.80). This shows a big difference in students' knowledge level of the target words before and after the experiment (15.5). This suggests the use of semantic mapping in the classroom to enhance students' knowledge level of words.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.700531							
R Square	0.490744							
Adjusted I	0.451571							
Standard E	1.202833							
Observati	15							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regressio	1	18.12483	18.12483	12.52745506	0.003629			
Residual	13	18.80851	1.446808					
Total	14	36.93333						
	Coefficients	*andard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-0.6864	1.068811	-0.64221	0.531897089	-2.99543	1.622621039	-2.99543	1.622621039
After	0.196015	0.055381	3.539415	0.003629258	0.076372	0.315657087	0.076372	0.315657087

Figure 21: Pre-test and post-test analysis for the experimental group by ANOVA

The results of the above figure shows that the difference in the mean scores of the experimental group before and after the experiment using ANOVA test is identified at 0.00 (P-value = 0.00 & T-value = 3.53). When the statistical significance of the mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.00) indicates a statistical significance. Therefore, the results indicate a statistical development in vocabulary knowledge level before and after the experiment to a significant degree.

4.3.3. A comparison of vocabulary knowledge level within the control group before and after the experiment

In like manner, the mean scores of the control group on both the pre-test and the post-test are compared using the descriptive statistics tool to investigate participants'

development of the target words over a six-week period. In addition, another tool, ANOVA, is used to ascertain whether the difference is statistically significant or not.

Before		*After*	
Mean	2.4	Mean	14.73333
Standard Error	0.349149	Standard E	0.693278
Median	2	Median	15
Mode	2	Mode	18
Standard Deviation	1.352247	Standard D	2.685056
Sample Variance	1.828571	Sample Va	7.209524
Kurtosis	-0.03155	Kurtosis	-1.37379
Skewness	0.943942	Skewness	0.072511
Range	4	Range	8
Minimum	1	Minimum	11
Maximum	5	Maximum	19
Sum	36	Sum	221
Count	15	Count	15

Figure 22: The difference in the control group's mean score on the pre-test and the post-test

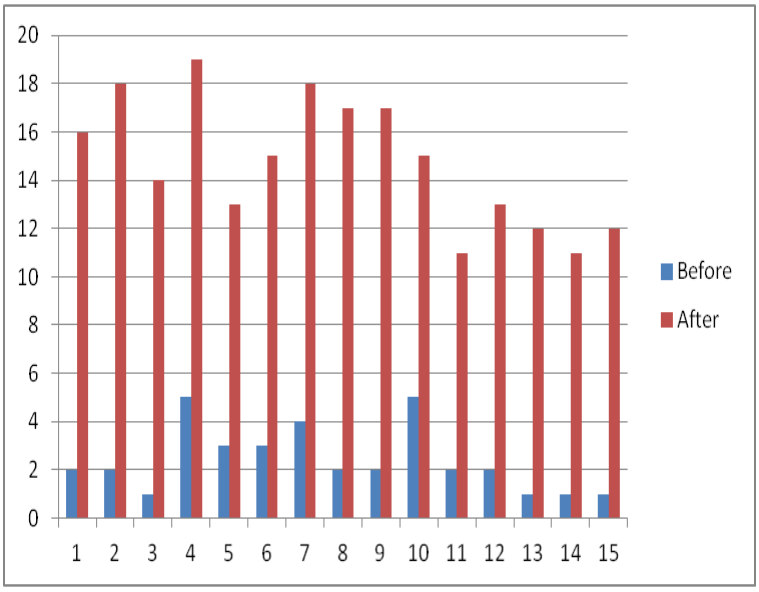

Figure 23: The control group before and after the experiment

As explained in the above two figures, the mean score of the control group at the outset of the experiment is 2.4 (N = 15 & M = 2.4 & SD = 1.35), and the mean score of the experimental group at the end of the experiment is 14.7 (N = 15 & M = 14.7 & SD = 2.68). This shows a big difference in students' knowledge level of the target words before and after the experiment (12.3). This suggests the use of wordlists in the classroom to enhance students' knowledge level of words.

SUMMARY OUTPUT								
Regression Statistics								
Multiple F	0.562638							
R Square	0.316561							
Adjusted I	0.263989							
Standard E	1.160107							
Observati	15							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regressio	1	8.103963	8.103963	6.021450413	0.029002			
Residual	13	17.49604	1.345849					
Total	14	25.6						
	Coefficients	*tandard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-1.77477	1.727472	-1.02738	0.322979237	-5.50674	1.957206537	-5.50674	1.957207
After	0.283355	0.115473	2.453864	0.02900159	0.033891	0.532819835	0.033891	0.53282

Figure 24: Pre-test and post-test analysis for the control group by ANOVA

The results of the above figure shows that the difference in the mean scores of the control group before and after the experiment using ANOVA is identified at 0.02 (P-value = 0.02 & T-value = 2.45). When the statistical significance of the mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.02) indicates a statistical significance. Therefore, the results indicate a statistical development in vocabulary knowledge level before and after the experiment to a significant degree.

4.3.4. Participants' retention of the target words at the end of the experiment

The same content of the post-test and the same data analysis tools used to collect and analyze the data of the first research site are used to examine participants' retention of

the target words after both strategies are employed in the classroom to know which strategy is more effective to prolong students' retention of words and to ascertain whether the difference is statistically significant or not.

Experimental		*Control*	
Mean	18.4666667	Mean	14.73333
Standard Error	1.49878257	Standard Error	0.693278
Median	17	Median	15
Mode	25	Mode	18
Standard Deviatio	5.80475995	Standard Deviat	2.685056
Sample Variance	33.6952381	Sample Varianc	7.209524
Kurtosis	-1.27979814	Kurtosis	-1.37379
Skewness	0.38136349	Skewness	0.072511
Range	18	Range	8
Minimum	11	Minimum	11
Maximum	29	Maximum	19
Sum	277	Sum	221
Count	15	Count	15

Figure 25: Descriptive statistics of both groups' mean scores on the post-test

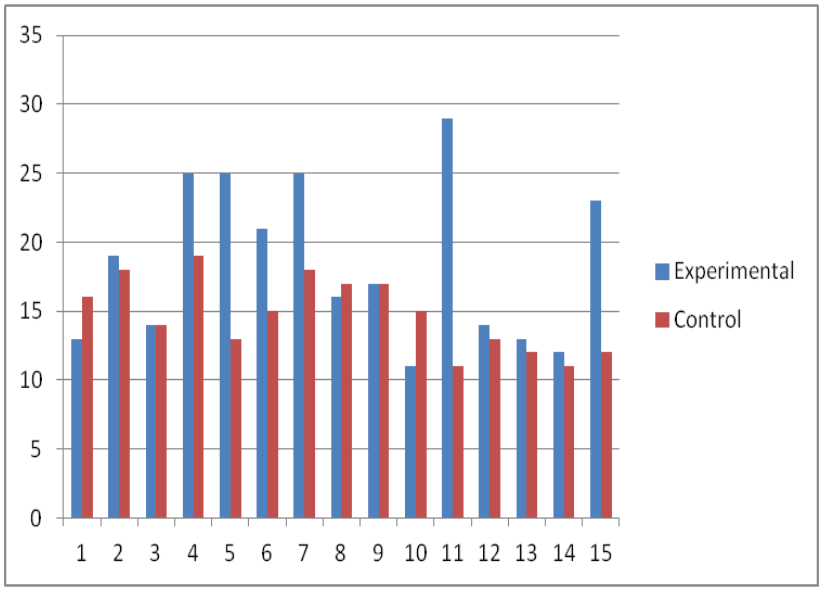

Figure 26: The experimental and control groups after the experiment

As illustrated in the above two figures, the mean score of the experimental group after the experiment is 18.4 (N= 15 & M = 18.4 & SD = 5.80), and the mean score of the control group after the experiment is 14.7 (N = 15 & M = 14.7 & SD = 2.68). This result shows a big difference in the mean scores of both groups after the experiment is conducted (3.7). This means that the participants employed with semantic mapping strategy outperform those employed with the wordlist strategy. This indicates that semantic mapping as a vocabulary teaching strategy has a greater effect on participants' retention of words over time than does the wordlist over the same time.

t-Test: Two-Sample Assuming Equal Variances

	Experimenta	*Control*
Mean	18.46667	14.73333
Variance	33.69524	7.209524
Observati	15	15
Pooled Va	20.45238	
Hypothesi	0	
df	28	
t Stat	2.260765	
P(T<=t) on	0.015868	
t Critical o	1.701131	
P(T<=t) tw	0.031737	
t Critical tv	2.048407	

t-Test: Two-Sample Assuming Unequal Variances

	Experimenta	*Control*
Mean	18.46667	14.73333
Variance	33.69524	7.209524
Observati	15	15
Hypothesi	0	
df	20	
t Stat	2.260765	
P(T<=t) on	0.017539	
t Critical o	1.724718	
P(T<=t) tw	0.035079	
t Critical tv	2.085963	

Figure 27: Independent-samples t-test of the difference of the mean scores on the post-test

As displayed in the above figure, the difference in the mean scores of both groups when equal and unequal variances are assumed is identified at 0.03 (P-value = 0.03 & T-value = 2.26). When the statistical significance of mean scores is set at 0.05 or lower (P <= 0.05), this means that the above value (0.03) indicates a statistical significance in both groups' mean scores. This means that there is a significant difference in both groups' retention of words over a six-week period. This result suggests the superiority of semantic mapping over wordlists in the classrooms for longer retention of L2 vocabulary.

4.4. Discussion of the research results

4.4.1. The first research question

The results of both research sites indicate that there is a great improvement in participants' knowledge level of the target words after both strategies are applied in the classrooms. The results of the first research site show that the participants at 10ED and 10CD classes are homogeneous regarding their knowledge level of the target words prior to the experiment as the difference in the mean scores of both groups prior to the experiment is only (0.6) and this difference is not statistically significant (P-value = 0.33 when equal and unequal variances are assumed). However, a great development is noticed when semantic mapping and wordlist strategies are employed in the classrooms and this development is statistically significant. This appears clearly in the big difference in the mean score of the experimental group before and after the experiment (M = 3 & 18.5 respectively) and P-value is identified at (0.00) and the mean score of the control group before and after the experiment (M = 2.4 & 14.7 respectively), and P-value is also identified at (0.00).

The results of the second research site indicate that the participants at 10ES and 10CS classes have the same low level of the target words prior to the experiment as the difference in the mean scores of both groups prior to the experiment is only (0.5) and this difference is not statistically significant (P-value = 0.33 when equal and unequal variances are assumed). However, this knowledge level is highly developed when both strategies are employed in the classroom settings to a significant degree. This can easily be noticed by comparing the mean score of the experimental group before and after the experiment (M = 2.9 & 18.4 respectively) and P-value is identified at (0.00) and the mean score of the control group before and after the experiment (M = 2.4 & 14.7 respectively) and P-value is identified at (0.02).

Therefore, it is concluded from the above results that both strategies can be used in the classrooms to promote students' knowledge of L2 vocabulary. These results also confirm the first research hypothesis assumed by the researcher in the first chapter of this research. Moreover, these results agree with the results of the research carried out by Nilforoushan (2012) in which semantic mapping as a vocabulary teaching strategy has a positive influence on students' knowledge level of L2 vocabulary in general and

their awareness of the evaluative and potency dimensions of L2 vocabulary in particular. The same results are also concluded from other studies including the study conducted by Radwan and Rikala-Boyer (2011) in which semantic mapping has a significant influence on recognition of words, and the study carried out by Khoii and Sharififar (2013) in which semantic mapping can be applied in the classroom settings to improve students' knowledge level of L2 vocabulary.

On the other hand, the results of this research agree with the results of the studies conducted by Laufer and Shmueli (1997), Qian (1996) and Mehrpour (2008) in which the wordlist as a vocabulary teaching strategy increases students' knowledge level of L2 vocabulary to a significant degree. However, the results of the study conducted by Laufer and Shmueli (1997) suggest relating the learnt words to their meaning in the first language for better vocabulary proficiency and performance rather than giving an explanation of the learnt words in the second language as employed in the present study.

4.4.2. The second research question

The results of this research indicate that semantic mapping as a vocabulary teaching strategy has a greater influence on participants' retention of the target words at both research sites than the wordlist. The results of the first research site show that there is a big difference in the mean scores of the participants at 10ED and 10CD classes after both strategies are employed in the classrooms (M = 18.5 & 14.7 respectively) and this difference is statistically significant (P-value = 0.03 when equal variances are assumed & 0.04 when unequal variances are assumed). Similarly, the results of the second research site indicate a big difference in the mean scores of the participants at 10ES and 10CS classes after both strategies are employed (M = 18.4 & 14.7 respectively) and the difference is statistically significant (P-value = 0.03 when both equal and unequal variances are assumed). These results give a clear answer to the second research question: semantic mapping strategy as a vocabulary teaching strategy has a significantly greater influence on students' retention of L2 vocabulary than does the wordlist.

Therefore, it is concluded from the above results that semantic mapping, when compared to wordlists, can best be used in the classrooms to enhance longer retention of

L2 vocabulary. These results also confirm the second hypothesis assumed by the researcher in the first chapter of this research. Furthermore, the results of this study are congruent with the results of the study carried out by Morin and Goebel (2001) in which the participants who employed the semantic mapping technique plus some oral activities to enhance L2 vocabulary acquisition and retrieval outperform those having similar oral activities but without employing the semantic mapping technique. In addition, the results of the current study are in line with the study carries out by Crow and Quigley (1985) in which semantic mapping as a vocabulary teaching strategy is more effective to prolong students' retention of L2 vocabulary than teaching L2 vocabulary on a word-by-word basis.

4.4.3. The researcher's view point

The greater influence of semantic mapping on students' knowledge level and retention of L2 vocabulary may be attributed to the connection made and the relationship created between the target words and other inter-related words resulting in more ties in students' mental system which in turn leads to better memorization of the learnt words. To make, create or build a connection of words in students' mental system, Thornbury (2015) argue that a deep mental process is required to first explore, and then to make a connection between the already existent and the target words.

Another reason for the greater influence of semantic mapping could be attributed to the use of visual aids in the form of maps or graphs as drawn on the board or displayed on any other displaying boards to make or create a connection between the inner and the new words. This idea is underscored by Sagarra and Alba (2006) as important to make the process of constructing new meanings for the target words easier and also to facilitate the process of transferring the learnt words from the short-term memory to the long-term memory leading to greater development and longer retention of vocabulary items. The idea of using semantic maps or graphs for greater development and longer retention of vocabulary items is also underpinned by earlier researchers including Stahl and Vancil (1986) and Mohan (1994).

However, the study carried out by Stahl and Vancil (1986) among others concludes that semantic maps or graphs are not enough per se to promote students'

knowledge level and retention of L2 vocabulary. According to them, such semantic maps or graphs should be created in the classroom through a full teacher-student and student-student interaction. Therefore, the researcher of the current study suggests that language teachers may be better off going to the class with no fixed or preconceived maps or graphs to maximize the benefit of using semantic mapping as a vocabulary teaching strategy in the classroom.

Chapter Five: Conclusions & Recommendations

5.1. Introduction

This chapter gives a short summary of the information and a concise conclusion of the results provided in this research based on the literature reviewed and the experiment conducted for the purpose of this research, followed by some recommendations for EFL teachers. Moreover, the researcher of the current research highlights some limitation areas that may have affected the perfect implementation of the research and the precise interpretation of its results. All these limitation areas are covered by the researcher in this chapter to ensure that he provides an accurate context for his work and to pave the way before future researchers to fill the gap of this research. Finally, the researcher provides pathways to be used as guidelines or starting points by future researchers when they decide to conduct further research in the field.

5.2. Conclusions of the study & recommendations for EFL teachers

The experiment carried out by the researcher of this study demonstrates and corroborates the usefulness and the positive influence of semantic mapping strategy in L2 vocabulary teaching and learning. The results of this experiment show that semantic mapping strategy is more effective than wordlists when applied in the classroom to increase students' vocabulary knowledge and prolong their retention of the learnt words. The following points summarize the present research and provide some useful recommendations for EFL teachers.

1. As asserted by Carter and McCarthy (2014), vocabulary is the heart of language and the cornerstone of communication. According to them, without ample vocabulary knowledge, language learners will not be able to effectively communicate with others in proper contexts. This belief is also supported by Beck, McKeown and Kucan (2013) and Morgan and Rinvolucri (2008) who assert that without a sufficient vocabulary base, language learners will not be interested in learning the language and will be weak with regard to their language proficiency level as a result. They continue to say that students will

feel insecure whenever they try to produce rich answers, ask questions, or even communicate properly and adequately with class teachers and their peers using the target words. Therefore, the process of L2 vocabulary teaching and learning should be given special attention by EFL teachers in EFL classrooms.

2. The process of L2 vocabulary teaching and learning is not an easy but rather a very complicated process which requires, as stated by Nation (2013) and Thornbury (2015), some innovative strategies and methods to be adopted by L2 teachers in the classroom to increase students' knowledge base and promote their retention of words. Based on the results of this study, the encoding strategies represented in semantic mapping prove to be very effective and can best be used in the classroom when compared to the rehearsal strategies represented in wordlists. These results are very useful for EFL teachers who are in search of the most effective strategies to promote students' development and increase their retention of lexical items.
3. The effectiveness of semantic mapping over wordlists may be attributed to the connection made or the association created between or among words (Thornbury 2015), and to the use of visual aids in the form of maps or graphs drawn on the black board or displayed on any displaying boards (Sagarra & Alba 2006). However, the use of pre-planned maps or graphs by EFL teachers in the classroom is fruitless as contended by Stahl and Vancil (1986). They argue that semantic maps or graphs should be developed inside not outside the classroom, and this happens through full involvement or engagement in vocabulary-related activities. Therefore, EFL teachers are advised to develop the maps-related activities inside the classroom though teacher-student and/ or student-student interaction to obtain the desired learning outcomes.
4. It is concluded from this study that EFL teachers should be eclectic when they teach L2 vocabulary items as wordlists may work better especially with students at low proficiency levels as demonstrated by Mehrpour (2008). EFL teachers may use one strategy or combine both of them or even vary between them in one class as per word difficulty levels and nature of the learnt/ taught words. Other factors that have to be taken into account by EFL teachers when employing

semantic mapping or any other effective strategy in the classroom include students' social, cultural, emotional and linguistic factors as explicitly expressed in the works of Saville-Troike (2012), Mitchell and Myles (2014), and Ortega (2013).

5. The idea that memorization of words is highly dependent on the amount of task-induced involvement as corroborated by Hulstijn and Laufer (2001) is also supported by the results of this study. The employment of semantic mapping strategy in the classroom requires tasks with higher levels of involvement and mental processes than do wordlists (Thornbury 2015). Therefore, EFL teachers are advised to engage students in various vocabulary activities based on semantic maps to enhance longer retention of words.
6. The adoption of maps-based activities in the classroom with a full support from language teachers brings to the surface some other benefits represented in developing, improving and boosting students' cognitive, meta-cognitive and critical thinking skills, and this occurs when students make a connection between some central and other inter-related words in their mental lexicon (Thornbury 2015).

5.3. Limitation of the study

The effectiveness of memory strategies, represented in semantic mapping and wordlists, on students' development and retention of L2 vocabulary is constrained by a number of factors, and therefore, the results of this study should be interpreted with some caution. Firstly, using authentic and useful words (target words) in the classroom plays a vital role in motivating students whether intrinsically or extrinsically to acquire and retain the target words longer as underscored by many scholars and researchers in the field of education (e.g., Jacobsen, Eggen & Kauchak 2009, Orlich et al. 2013, Brophy 2014) and others in the field of second language acquisition (e.g., Ortega 2013, Randall 2007, Ellis et al. 2009). However, the target words used for this investigation were just measured for their difficulty by a pre-test to check whether the participants have the same low level of the target words prior to the experiment to assure their homogeneity, and no tests were run to check whether they are useful for the participants prior to the

experiment, a matter which may have affected adversely on the perfect implementation and the accurate interpretation of the results. The target words were just used because they assured the participants' homogeneity prior to the experiment and because they had to be covered at the time of the experiment, according to the class teachers.

Secondly, Nation and Wang (1999) suggest that L2 vocabulary can better be retained in the mind for longer periods if L2 students are exposed to the target items a minimum of ten times. The participants of this study were exposed to the target items only three times in a row because of the limited access to the research sites as the principal of the second research site allowed only for a five-day visit to conduct the experiment. Hence, the first three visits were allocated by the researcher to run the pre-test and conduct the treatment, while the other two visits were allocated to administer the post-test and the delayed post-test.

Thirdly, the traditional and longstanding habit of memorizing the content of tests as a major strategy used by students at different levels of educational settings, or even the state of high concentration created by the surrounding atmosphere, may have helped the students memorize the target words in the post-test and the delayed post-test. However, this habit or state did not affect the results of the delayed post-test which was administered to establish the reliability of the research results and tools, knowing that the delayed post-test was run only three days after the post-test was administered.

Ultimately, the number of the investigated words was subject to careful discussion between the class teachers and the researcher of this research. The class teachers were arguing that ten target words are enough for L2 students to digest in one class, but this number of words was not enough for the researcher to build his research on. They continued to say that not all students have the same proficiency level of the target language and it would be very difficult for low-achieving students to catch up with high-achieving ones if more than ten target words were taught/ learnt in one session. This would have had a negative impact on the precise interpretation of this research results if this matter had been considered true especially when no tests had been run in this research to measure students' proficiency level of the target language prior to the experiment. Notwithstanding, the claim that L2 students cannot grasp more than ten new words in one class was refuted by many scholars and researchers in the

field of second language acquisition including Lozanov (1979) who developed a teaching strategy called suggestopedia to allow for a large number of words, hitting 800 words, to be taught/ learnt in one lesson.

5.4. Pathways for future research

Recommendations for future researcher include replicating this study in other UAE Emirates to cover the limitation areas of this study to reach more reliable results and clear-cut conclusions in addition to easily identifying any overlaps or differences with regard to the effectiveness of semantic mapping and wordlists on students' development and retention of L2 vocabulary in the UAE context. Furthermore, more valuable information can be obtained from conducting the same study on students from other educational levels; such as primary and middle school students of lower language proficiency levels.

Moreover, the question that semantic mapping is the most influential memory strategy to prolong students' retention of L2 vocabulary remains to be answered by comparing semantic mapping to other effective memory strategies including memorization by repetition and memorization by over-learning. Additionally, future research may have to be conducted to explore the effectiveness of semantic mapping on other language skills such as reading and writing skills. Finally, it would be very useful to conduct future research to investigate UAE teachers' attitudes towards semantic mapping as a vocabulary teaching strategy to know the possibility of successful implementation of semantic mapping in the UAE context.

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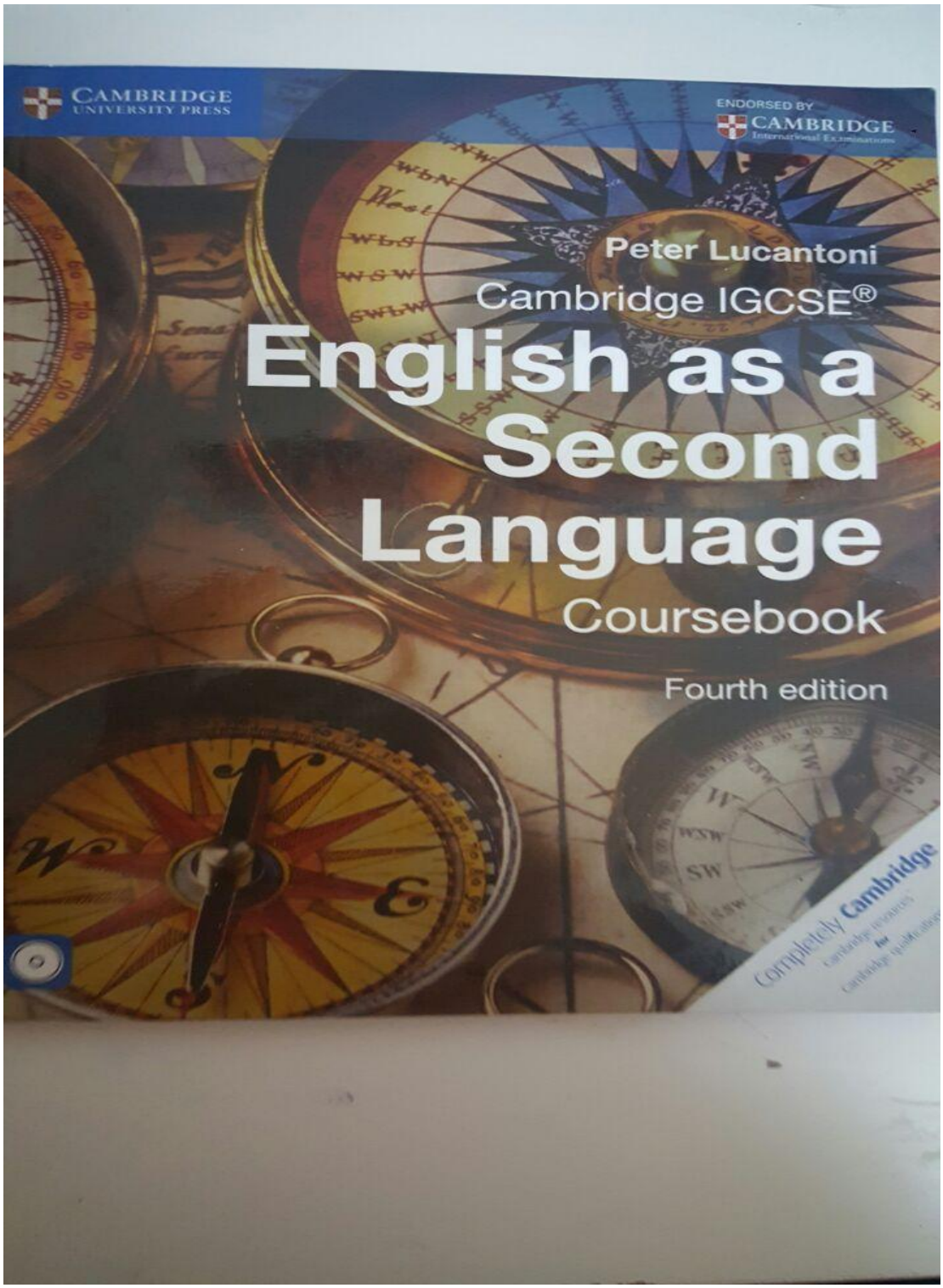
Appendices

Appendix (A): Research material



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Contents

Unit 1: Focus on reading skills

In this unit, we will concentrate on skimming and scanning reading skills. These skills are important when you need to identify and retrieve facts and details, and to understand and select relevant information from a short text, such as an advertisement, brochure, notice, guide, report, manual or set of instructions, which may include pictures or a diagram.

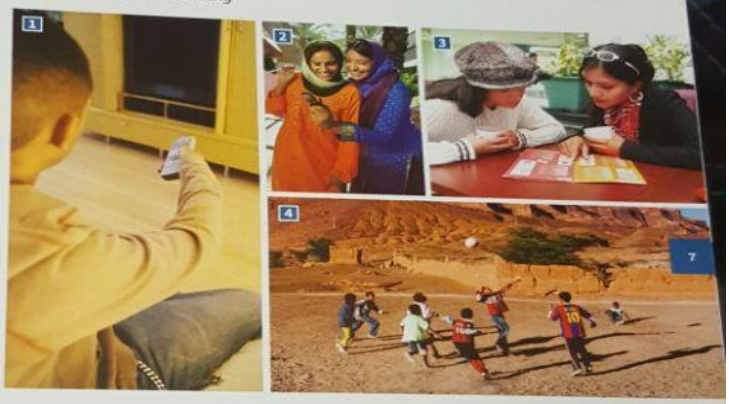
In this unit, you will also:

- discuss things you do in your free time, and talk about preferences and suggestions
- answer questions about different types of texts
- look at adjective + noun combinations
- answer some exam-style questions.

A Speaking and vocabulary

1 What do these pictures show? Discuss your ideas with a partner and write down **at least five** words or phrases that you think of.

Example: *people relaxing*



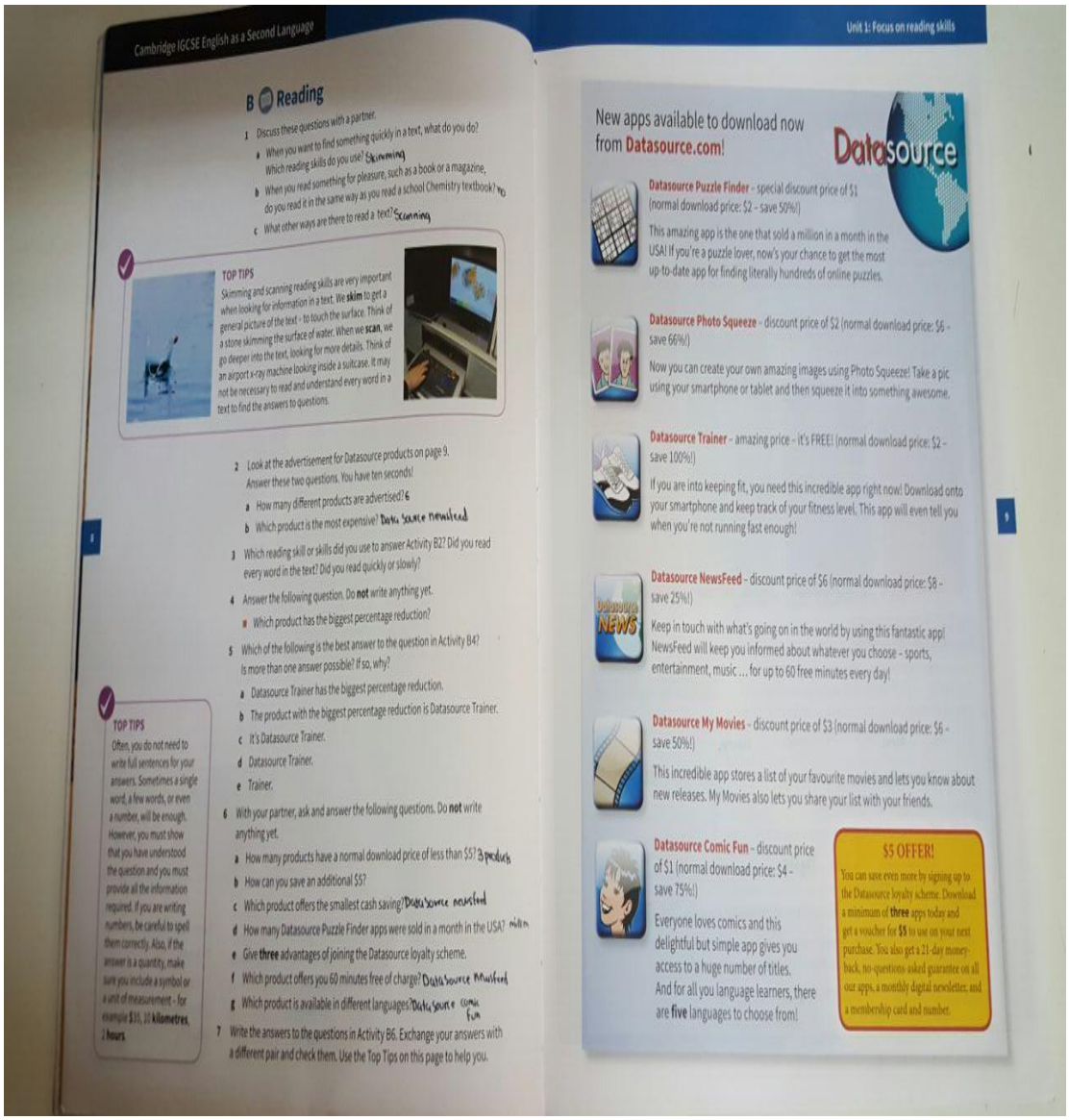
2 What do you enjoy and not enjoy doing in your free time? Use the pictures and your ideas from Activity A1 to help you. Make a list by copying and completing the table. Compare your list with your partner's. Are they the same or different?


Enjoy	Don't enjoy
watching films on TV	tidying my room
reading books	Solving homework
watching reality Shows	School
gossiping	Pressing clothes
drawing	Studying
Shopping	doing chores

LANGUAGE TIP

Remember that the verbs *enjoy* and *dislike* are both followed by *-ing*.

Example: *I **enjoy** watch**ing** movies on TV, but I **dislike** tidy**ing** my room.*



Cambridge IGCSE English as a Second Language

Unit 1: Focus on reading skills

B Reading

1 Discuss these questions with a partner.

a When you want to find something quickly in a text, what do you do? Which reading skills do you use? Skimming

b When you read something for pleasure, such as a book or a magazine, do you read it in the same way as you read a school Chemistry textbook? no

c What other ways are there to read a text? Scanning

TOP TIPS

Skimming and scanning reading skills are very important when looking for information in a text. We **skim** to get a general picture of the text – to touch the surface. Think of a stone skimming the surface of water. When we **scan**, we go deeper into the text, looking for more details. Think of an airport x-ray machine looking inside a suitcase. It may not be necessary to read and understand every word in a text to find the answers to questions.

2 Look at the advertisement for Datasource products on page 9. Answer these two questions. You have ten seconds!

a How many different products are advertised? 6

b Which product is the most expensive? Data source newsfeed

3 Which reading skill or skills did you use to answer Activity B2? Did you read every word in the text? Did you read quickly or slowly?

4 Answer the following question. Do **not** write anything yet.

a Which product has the biggest percentage reduction?

5 Which of the following is the best answer to the question in Activity B4? Is more than one answer possible? If so, why?

a Datasource Trainer has the biggest percentage reduction.

b The product with the biggest percentage reduction is Datasource Trainer.

c It's Datasource Trainer.

d Datasource Trainer.

e Trainer.

6 With your partner, ask and answer the following questions. Do **not** write anything yet.

a How many products have a normal download price of less than $5? 3 products

b How can you save an additional $5?

c Which product offers the smallest cash saving? Data source newsfeed

d How many Datasource Puzzle Finder apps were sold in a month in the USA? million

e Give **three** advantages of joining the Datasource loyalty scheme.

f Which product offers you 60 minutes free of charge? Data source newsfeed

g Which product is available in different languages? Data source comic fun

7 Write the answers to the questions in Activity B6. Exchange your answers with a different pair and check them. Use the Top Tips on this page to help you.

TOP TIPS

Often, you do not need to write full sentences for your answers. Sometimes a single word, a few words, or even a number, will be enough. However, you must show that you have understood the question and you must provide all the information required. If you are writing numbers, be careful to spell them correctly. Also, if the answer is a quantity, make sure you include a symbol or a unit of measurement – for example $35, 10 **kilometres**, 2 **hours**.

New apps available to download now from Datasource.com!

Datasource

Datasource Puzzle Finder – special discount price of $1 (normal download price: $2 – save 50%!)

This amazing app is the one that sold a million in a month in the USA! If you're a puzzle lover, now's your chance to get the most up-to-date app for finding literally hundreds of online puzzles.

Datasource Photo Squeeze – discount price of $2 (normal download price: $6 – save 66%!)

Now you can create your own amazing images using Photo Squeeze! Take a pic using your smartphone or tablet and then squeeze it into something awesome.

Datasource Trainer – amazing price – it's FREE! (normal download price: $2 – save 100%!)

If you are into keeping fit, you need this incredible app right now! Download onto your smartphone and keep track of your fitness level. This app will even tell you when you're not running fast enough!

Datasource NewsFeed – discount price of $6 (normal download price: $8 – save 25%!)

Keep in touch with what's going on in the world by using this fantastic app! NewsFeed will keep you informed about whatever you choose – sports, entertainment, music … for up to 60 free minutes every day!

Datasource My Movies – discount price of $3 (normal download price: $6 – save 50%!)

This incredible app stores a list of your favourite movies and lets you know about new releases. My Movies also lets you share your list with your friends.

Datasource Comic Fun – discount price of $1 (normal download price: $4 – save 75%!)

Everyone loves comics and this delightful but simple app gives you access to a huge number of titles. And for all you language learners, there are **five** languages to choose from!

$5 OFFER!

You can save even more by signing up to the Datasource loyalty scheme. Download a minimum of **three** apps today and get a voucher for **$5** to use on your next purchase. You also get a 21-day money-back, no-questions-asked guarantee on all our apps, a monthly digital newsletter, and a membership card and number.


Cambridge IGCSE English as a Second Language
Unit 1: Focus on reading skills
You Write!
The amazing online webzine for teenagers who want to share their writing!
Send us your writing by 30th June for a chance to see it in the next issue (publication date 31st July) of You Write!
Choose which section you want your work to appear in: MY STORY, MY POEM, MY OPINION, MY REPORT
MY STORY:
MY POEM:
MY OPINION:
MY REPORT:
What do I do next?
Complete and submit the form below. You must do this electronically. Do not forget to attach your piece of writing!
UPLOAD YOUR ARTICLE
SUBMIT
First name: Elena
Family name: Zakarya
Email: elzakarya@gmail.com
Age last birthday: 15
Name of school: SIPS
Which section are you writing for? Please select.
My Story ✓ My Poem ☐ My Opinion ☐ My Report ☐
Title for your writing (maximum FIVE words): My life
Number of words: 360
I have my parent's/guardian's permission to submit my writing to You Write! Please select YES NO
Data Protection Act: Sometimes we may wish to send you information about other products that we feel may be of interest to you. Select this box if you do NOT wish to receive such information ✓
Need to contact us? Click here or email us: info@youwrite.eu
1 Have a quick look at the second text, You Write!, on page 10. Where might you find a text like this? Why? Choose one or more from the list.
a dictionary an email a newspaper a comic
a TV magazine a children's magazine a blog
a shop window a leaflet an encyclopaedia a website
9 What is the best strategy for addressing short-answer questions? Put the following points into a logical order. Be prepared to explain your order.
a Search likely sections of the text. 4
b Read the question. 1
c Underline the key words. 3
d Ask yourself what information the question is asking for. 2
10 Look at these questions based on the You Write! webzine on page 10. Do not write anything yet. Find and note down the key word/s in each question.
a Who is You Write! for? teenagers
b When can you read the next publication? 31st July
c How many sections are there in the webzine? 4 sections
d What is the maximum number of words for a creative story? 275
e If something has made you angry, for which section should you write? My Opinion
f Which section does not tell you how many words to write? My poem
g After you have finished your writing, what do you have to do? Complete & Submit
h How long can the title for your writing be?
i If you select the final box, what will you not receive?
TOP TIPS
Notices, leaflets, signs, advertisements and timetables can contain a lot of information in various formats. The best strategy for answering questions on sources like these is to decide which word or words in the question will lead you to the place in the text that contains the answer. These words are called key words. Was it possible to identify key words in every question in Activity B10? Sometimes you may not be able to decide, but usually there are one or two words that will help you to identify where in text you can find the answer.
11 Now write the answers to the questions in Activity B10. Keep your answers short, but remember to include all the information that the questions ask for. Exchange your answers with a partner and check them.

C Language focus: Adjective + noun

1 Notice the use of adjectives in the two texts you have read in this unit:

amazing app *up-to-date app* *amazing online webzine* *creative stories*

a Copy and complete this sentence.

Adjectives are used to provide ... about ... In English, adjectives usually come ... the noun.

b What happens in **your** language? What is the usual order for adjectives and nouns?

2 Quickly read through the two texts on pages 9 and 10 again. Find **at least three** more examples of adjective + noun combinations in each text. Compare your examples with a partner's.

3 Adjectives can often be formed from other parts of speech. Copy and complete the table with the correct words. You may not be able to fill in all the gaps.

Adjective	Noun	Adverb	Verb
amazing	amazement	amazingly	amaze
special	...	...	...
incredible	...	...	...
delightful	...	...	...
funny	...	...	...
serious	...	...	...
original	...	...	...
creative	...	...	...

4 Look back at the two texts in this unit and find **at least five** more adjectives. Add them to your table and then complete the other parts of speech (noun, adverb and verb) where possible.

5 Notice that there are different possible endings for adjectives in English. Using the words from Activities C3 and C4, list some of these possible endings. Then think of **three** more examples for each ending.

Example: *-ing: interesting, amazing* *tiring, fascinating, boring*

6 Choose **eight** adjectives from Activity C5, then combine them with nouns and use them in sentences of your own.

Example: *That webzine was full of* ***interesting stories*** *and* ***ideas.***

D Speaking: Showing preferences and making suggestions

1 Listen to Maria and Christos talking. How many different ways do they use to show a preference or to make a suggestion?

2 Look at the audioscript on page 188 and check the meaning of the phrases that are underlined.

3 Think of more ways to show a preference and to make a suggestion. Copy the table below and add more phrases. Compare your answers with your partner's.

Showing a preference	Making a suggestion
I'd rather go ...	Why don't we go ...?
	Let's go ...

4 Usually when we **show a preference** for something or **make a suggestion**, we also give a **reason**. What reason does Maria give for wanting to go to the shopping centre later? What reason does Christos give for wanting to go to the shopping centre at the weekend?

LANGUAGE TIP

Look at how **preference** and **suggestion** phrases are followed by infinitive, 'to' infinitive or -ing forms of the verb.

+ infinitive	+ 'to' infinitive	+ -ing
Why don't we ... + do?	Would you like ... + to do?	What/How about ... + doing?
Let's + do	I'd like + to do	What do you think about ... + doing?
I suggest we + do	I'd (d) prefer + to do	I suggest + doing
Can't we ... + do?		
I think we should ... + do		
I'd rather + do		

5 Work with your partner. For each of the following examples, one of you makes a suggestion and the other gives a preference. Use a variety of phrases from the Language Tip, and support your suggestions and preferences with reasons.

Example: *Buying new trainers or a birthday present for someone.*

Maria: *Why don't you buy those new trainers we saw in town?*

Christos: *No, I don't think so, Maria. It's my mum's birthday next month and I'd prefer to save my money for her present.*

a Going on holiday to Australia or Iceland.

b Eating Italian or Japanese food in a restaurant.

c Watching a movie at the cinema or on TV.

d Playing basketball or going swimming.

TOP TIPS

Making suggestions and expressing preferences about a particular topic are important aspects of speaking effectively. Although it is important to speak accurately (and using set phrases like the ones in this unit will be very helpful), in order to ensure that no misunderstandings take place, the most important thing is to talk communicatively and effectively in a fluent manner. Also, try to avoid using slang expressions and vocabulary, say 'yes' not 'yeah' and try to use full sentences whenever possible (rather than single-word answers to questions).

6 A competition has just been announced. An area of land near your school is going to be developed. For the competition, you need to make a short speech to your schoolfriends, giving your preferences and reasons for the development of the land. Plan your speech. It might be helpful to write down some ideas, like this:

Cambridge IGCSE English as a Second Language

E Further practice

Read and answer

1 Read the leaflet about the Achileas Sports Centre and answer the questions.

Welcome!

Welcome to the new Achileas Sports Centre and Swimming Pool Complex monthly newsletter! We offer a wide variety of activities for you and all your family and friends. Whether your interest is fitness, football, tennis, basketball or swimming, we can offer you an excellent range of activities to suit all your needs. We hope you will enjoy your visit to the new Achileas Complex and take advantage of the many facilities available.

Opening hours

Swimming Pool	
Monday–Friday	07.00–22.00
Saturday–Sunday & public holidays	08.00–21.00
Sports Centre	
Monday–Friday	06.00–22.00
Saturday–Sunday & public holidays	09.00–20.00
Achileas Restaurant	
Monday–Saturday	12.00–15.00 & 19.00–23.00
Sunday & public holidays	12.00–15.00 only

Membership

	Children (6–17)	Adults (18+)	Couples (2 adults)	Family (2 adults + 2 children)
Annual	$250	$400	$350 each	$1000
6-monthly	$130	$210	$180 each	$600
3-monthly	$70	$110	$100 each	$330
Monthly	$25	$45	$40 each	$120
Weekly	$20	$40	$35 each	$105
Daily	$10	$20	$15 each	$45

Facilities

Five fitness and special-focus gyms, one children's gym, Olympic pool and children's starter pool, four squash courts, four badminton courts, two basketball courts, eight outdoor tennis courts, two all-weather football pitches, Achileas Sports Shop, Achileas Restaurant.

Focus on gyms

Whatever your fitness level, whatever your age and whatever your fitness goals, we have something to offer you in one of our special-focus gyms! If you would like to lose weight, tone up, increase your strength or improve your health, we have highly qualified staff on hand to motivate you in one of our focus gyms.

Whether you wish to work out once a week or every day, for ten minutes or an hour, after an initial consultation, our staff will design your own personal-fitness programme, tailored to suit your individual needs. You will also benefit from regular reviews, where your progress will be monitored and your programme updated or adjusted accordingly.

All of this takes place in one of our five focus gyms: cardiovascular, resistance training, free weights, general and sports injury. All our focus gyms offer state-of-the-art machines and excellent user-friendly equipment, catering for all your health and fitness needs.

14

a) 8pm
b) $600
c) 2 Olympic pools, children's starter Pool
d) Achileas restaurant
e) 4
f) Initial consultation
g) regular reviews
h) State of the art machines & excellent user-friendly equipment

1 a What time does the sports centre close on public holidays?
b What is the cost for a family for a six-month membership?
c How many swimming pools are there?
d What non-sport facility does the complex offer?
e How many different 'fitness goals' are mentioned?
f What do you need to do before the staff can design your personal fitness programme?
g How is your progress assessed?
h What two things do all the 'focus' gyms offer?

Investigate and write

2 Find some examples of advertisements, leaflets, brochures or timetables and choose **two**. Study them carefully and then write **five to six** questions about each text for your partner to answer. The questions should require your partner to find factual details and to write short answers (a single word or phrase).

Speak

3 You are going to the cinema with two friends. There are three films to choose from: a comedy, a romantic drama and a sci-fi film. With two partners, say what your preferences are, suggest which film to see and give your reasons. Then make arrangements about when and where to meet.

Read and write

Look at the African Safari advertisement on page 16. Find the key word/s in the questions. Then write your answers to the questions below in your notebook.

a What is the minimum price for the African Safari?
b Name an activity included in the African Safari.
c How long is the African Safari?
d How far is the Victoria Falls Hotel from the airport?
e What can you see from the hotel?
f Where will you sleep on Day 2?
g Which hotels offer swimming facilities?
h Which hotel is said to be among the best in Africa?
i When will you get the chance to see animals living in their natural environment?
j On which day are you offered the chance to go shopping?
k What meals are included in the basic price?
l Which airline will fly you to Africa?

15

21/9/2016

Weekly News Special Readers' Offer

AFRICAN SAFARI

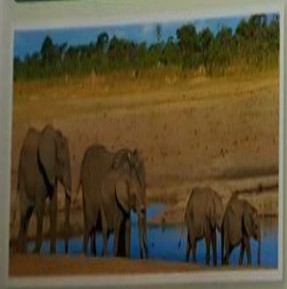
A night in the African rainforest, camping under the stars, right next to the mighty Mosi oa Tunya (Victoria Falls) in Zimbabwe, is just one of the many never-to-be-forgotten experiences of our latest offer to *Weekly News* readers. Six nights of pure African luxury in Zimbabwe's best hotels, with 5-star class and total comfort.

Day 1: The 5* Koningin Hotel will cater for all your needs during your first day in Africa after the 30-kilometre drive from the new international airport. Located only minutes from Victoria Falls, the hotel has splendid views of the breathtaking waters, and is surrounded by jacaranda trees and beautifully tended gardens. This hotel is regarded as one of the best on the African continent and has been voted the best in Zimbabwe by our panel of regular visitors.

Day 2: Your night under the stars, within a few minutes' walk of the cascading waters of Victoria Falls. Our purpose-built campsite retains the comfort and luxury of the main hotel, whilst offering our guests a chance to savour the atmosphere of the rainforest. Your evening starts with a sumptuous barbecue cooked by our head chef, followed by a programme of African music and dance. Then, as the moon rises and the stars shine, you retire to your tent to sleep or to listen to the fascinating sounds of the African rainforest. An experience never to be forgotten!

Days 3–4: The 5* Zimbabwe National Hotel will accommodate you in the heart of the Zimbabwean wilderness. By jeep from your campsite near the Falls, you arrive at midday via the Zambezi river. The hotel complex offers you every amenity you would expect from a 5* luxury hotel, including golf, tennis, squash, badminton, swimming in one of three open-air pools, bowls and full use of our health suite. In the evening, enjoy our international menu, or relax in the gardens.

Days 5–6: Arrive by helicopter at the 5* Plaza Hotel, only 20 minutes' drive from the airport. The Plaza is located near to the Zimbabwean National Game Reserve, and Day 5 includes an amazing safari to see some of the world's most exotic animals in their natural habitats. Your final day can be spent in the luxurious surroundings of the hotel, or you can make a shopping trip into town. The hotel itself offers a full range of 5* facilities, including its own cinema, as well as a pool complex with diving boards.



Included in this special offer: six nights in 5* hotel accommodation. Depart from London Stansted Airport. B & B meal basis (for HB add $250). Price is per person based on two people sharing (add $430 for single room). Scheduled flights with Air Zimbabwe.

From only $1999 per person

LANGUAGE TIP

When you see a word in a text that you do not understand, you can try several strategies to work out what the word means. First, look at the context (the words around the problem word). Then, try breaking up the word into smaller parts (for example breaking infrequent into in + frequent). Another strategy is to think if there is a similar word in your own language.

Read and answer

Look at the ESRB Ratings Guide below and answer these questions.

a What is the purpose of the guide?

b There are six different age-rating categories. Match each one with the correct description a–f.

c What do the following words and phrases in the text mean?
(i) concise and objective, (ii) consumers, (iii) informed choices

ESRB Ratings Guide

The Entertainment Software Rating Board (ESRB) ratings provide concise and objective information about the content in video games and apps, so consumers, especially parents, can make informed choices.

Rating categories suggest age appropriateness

1 EC — a Content is generally suitable for ages 17 and up.
2 E — b Content is generally suitable for all ages.
3 E10+ — c Content is generally suitable for ages 13 and up.
4 T — d Content suitable only for adults ages 18 and up.
5 M — e Content is intended for young children.
6 AO — f Content is generally suitable for ages 10 and up.

Look at the next section: Interactive Elements. Answer the following questions in your notebooks.

a Apart from email address, think of **three** other examples of personal information.

b What does third parties mean?

c Give another word or phrase for location.

d What does exposure mean?

e Which is the best meaning of the word via:
(i) using, (ii) with, (iii) across, (iv) through?

Interactive Elements

Shares Info: indicates that personal information provided by the user (email address, phone number, credit card info, etc.) is shared with third parties.

Shares Location: includes the ability to display the user's location to other users of the app.

Users Interact: indicates possible exposure to unfiltered/uncensored user-generated content, including user-to-user communications and media sharing via social media and networks.

Adapted from http://www.esrb.org/ratings/ratings_guide.jsp

21/9/2016

Exam-style questions

1 Read the following advertisement and answer the questions.

The E-Scoot rechargeable battery-operated electric scooter

ONLY £79.95 inc. p&p, for beating traffic or just having fun!

This new, ultra-lightweight (just 7.35 kilograms), folding electric scooter can be great fun for all the family (minimum recommended age 10 years) – and you don't need a licence to use it.

Its rechargeable on-board batteries, built in under the floor, will provide power to the engine up to a maximum distance of 15 kilometres and at a maximum speed of 12 kilometres per hour. Each full charge of the batteries takes approximately 4–5 hours, using the AC/DC charger provided.

The E-Scoot incorporates a foot-safety cut-off switch, as well as handlebar brakes. There's even a built-in stand to avoid having to lean it up against something when not in use.

E-Scoot is available in a choice of three great colours (blue, red and yellow), requires virtually no maintenance, can be used without battery power, if and when required, and is available at only £79.95 each, including postage and packing.

Adapted from an advertisement in *The Independent on Sunday*.

a) nothing.

a How much extra do you need to pay for postage and packing? [1]

b) Fun for all families.

b What can the scooter be used for? [1]

c) Kids under 10 years

c Who should not use the scooter? [1]

d) under the floor

d Where are the batteries located? [1]

e) 15 km

e How far can you travel on the scooter? [1]

f) 4-5 hours.

f How long do you need to wait for the batteries to recharge? [1]

g) built in stand.

g What can stop the E-Scoot from falling over? [1]

Extended

h) foot-safety cut off switch handlebar brakes.

h In what **two** ways can the scooter be stopped? [1]

i)

i What can you do if the battery runs out of power? [1]

recharge it.

[Total: 9 Extended, 7 Core]

2 Read the text and answer the questions that follow.

Somewhere for the weekend ... Bilbao

This artistic city celebrates its heritage with a flamboyant fiesta, set amidst Spain's most dramatic new architecture.

Now is the time to head south-west to see Bilbao at its most active, as celebrations of the city's heritage reach a climax with the Aste Nagusia festival. This is one of Spain's liveliest fiestas, comprising eight days and nights of processions, parades, concerts, dances, demonstrations of rural sports (including stone-lifting, log-chopping and hay-bale tossing) and bullfights. There are also nightly firework displays, best viewed from the city's bridges. Bus stops and street crossings are repainted gaudily, and bright scarves are draped around the necks of the city's statues.

Bilbao was founded in 1300 and is Spain's fourth biggest city (after Madrid, Barcelona and Valencia). Straddling the Nervión river, it is Spain's largest port. There are two official languages, Spanish and Euskara (the Basque language); most signs are bilingual.

The main tourist office is at Calle Rodrigo Arias (www.bilbao.net). It opens 9 a.m.–2 p.m. and 4–7.30 p.m. from Monday to Friday. On Saturdays, the hours are 9 a.m.–2 p.m., on Sundays 10 a.m.–4 p.m. A more useful operation is run at the airport (daily 7.30 a.m.–11 p.m.). There is also a tourist office at the Guggenheim Museum at Avenida Abandoibarra 2, open 10 a.m.–3 p.m. and 4–7 p.m. daily, though not on Sunday afternoons.

Many visitors and locals forsake sit-down meals in favour of nibbling at bars. Eating is no trivial matter, however. In the evenings, restaurants rarely open before 9 p.m. Traditional dishes revolve around veal, lamb and fish (especially cod), often in olive-oil sauces.

Adapted from an article in *The Independent Review*

a) to see Bilbao at its most active

a Why is now a good time to visit Bilbao? celebrations of city's heritage [1]

b) 8 days & nights.

b How long do the celebrations last? [1]

c) stone-lifting / log-chopping / hay-bale tossing

• Bus stops and street crossings decorated

c Give **three** examples of non-urban sports. [1]

d) are repainted • bright scarves are draped around the necks of the city's statues.

d In what **two** ways is the city of Bilbao decorated during the fiesta? [2]

e) Found in 1300 - 760 yrs ago

e How old is the city of Bilbao? [1]

f) Spain

f Where in Spain is Bilbao situated? [1]

g)

Extended questions

h) not trivial matter

g How many of the tourist offices are open on Sunday afternoons? [1]

h How important is eating in Bilbao? [1]

[Total: 9 Extended, 7 Core]

Appendix (B): The content of the pre-test

Students' sheet

Students' Name: **Class Name:** **Mark: /40**

Please read the following sentences carefully, then choose the answer that is closest in the meaning to the underlined words.

1- The city is <u>approximately</u> 10 kilometer from the capital.
a- usually b- hardly c- about d- carefully

2- It's important to understand how other cultures behave so you don't cause <u>trouble</u>.
a- disaster b- behavior c- problem d- offence

3- The teacher was <u>furious</u> when he saw the students playing during the class.
a- calm b- happy c- cheerful d- angry

4- We decided to go <u>somewhere</u> to eat the traditional dishes of this country.
a- sometimes b- restaurant c- some place d- somehow

5- Having good <u>manners</u> is one of secrets to go directly to the heart of people.
a- handshaking b- behavior c- entertaining d- ways

6- Street crossings are repainted <u>gradually</u> to make a spectacular view of the city.
a- usually b- immediately c- step-by-step d- intensively

7- A celebrity is a person who is easily <u>recognized</u> by people in a certain region or country.
a- seen b- accepted c- welcomed d- identified

8- I'll put you through to the Sales Department.

a- transfer b- book an appointment c- do a favor d- communicate

9- Don't make jokes on the phone as you may be misunderstood.

a- misguided b- well-interpreted c- misread d- mistaken

10- You should always speak to customers politely.

a- slowly b- toughly c- carefully d- in respectable manner

11- The 200-year-old jail is overcrowded, understaffed, and lacking basic amenities.

a- hot shower b- desirable features c- lovely people d- beds

12- He wanted to savor his time with Paul and his grown children.

a- play b- eat c- save d- enjoy

13- The stranger attended the concert in a sumptuous gown.

a- worn b- attractive c- shabby d- luxurious

14- A cascade **of** golden hair fell down his back.

a- large amount b- small amount c- considerable amount d- enough amount

15- Several suggestions have been offered for adoption by the panel.

a- competitors b- decision makers c- team players d- painters

16- He held the baby in his mighty hands.

a- harsh b- strong c- weak d- small

17- We only had half an hour to see her before she was whisked off to some exotic location.

a- tedious b- dangerous c- expensive d- exciting

18- With so many areas of woodland being cut down, a lot of wildlife is losing its natural habitat.

a- shelter b- environment c- region d- belt

19- The city is surrounded by beautifully tended gardens to attract the visitors.

a- cared for b- inclined c- well-arranged d- handled

20- You look splendid in this outfit.

a- handsome b- casual c- unattractive d- younger

21- I've ordered a new two-piece suite for the living-room.

a- ward

b- b- furniture c- instrumental composition d- liner

22- The control panel uses all the newest technology and is considered state-of-the-art.

a- very artistic b- very modern c- spectacular in view d- state manufactured

23- The electricity of her house was cut off for safety reasons.

a- resupplied b- replaced c- disconnected d- readjusted

24- I'm catering **for** twelve on Sunday, the whole family is coming.

a- serving b- waiting c- buying d- inviting

25- All the rooms have built-in cupboards.

a- easily removed b- permanently connected c- hard to connect d- separated

26- I need to get busy and tone myself up.

a- be more exhausted b- be more fit c- have bad qualities d- indulge myself

27- We tailor any of our products **to** your company's specific needs.

a- prepare b- arrange c- improve d- increase

28- The statue of the dictator was toppled over by the crowds.

a- graven image b- well-painted drawing c- banner d- poster

29- A leaflet about the new bus services came through the door today.

a- document b- brochure c- printed book d- TV program

30- The conversation revolved around childcare problems.

a- discussed b- dealt with c- centered on d- solved

31- I've skimmed through the paragraphs to understand the main idea of his passage.

a- read carefully b- read quickly c- double-read the passage d- read eagerly

32- Pollution has reached disturbingly high levels in some urban areas.

a- uninhabited b- built-up c- mountainous d- rural

33- The food in this new restaurant is fantastic.

a- extremely good b- extremely bad c- little spicy d- well-cooked

34- They go to the shopping centre just to window-shop.

a- sell goods b- buy goods c- haggle over goods d- watch goods

35- I scanned through the booklet but couldn't find the address.

a- searched quickly b- looked carefully c- read intensively d- gathered information

36- He draped his jacket over the back of the chair and sat down to eat.

a- removed b- dripped c- dropped d- put

37- This aircraft incorporates several new safety features.

a- include b- enhance c- consolidate d- call for

38- The doctor has made an initial diagnosis, but there'll be an additional examination by a specialist.

a- recognized b- final c- primary d- instant

39- The new findings suggest that women ought to monitor their cholesterol levels.

a- measure b- confirm c- check carefully d- maintain

40- There are no public phones in here but there is a phone booth in Market Street.

a- room b- operator c- switchboard d- kiosk

Appendix (C): The content of the post-test

Students' sheet

Students' Name: **Class Name:** **Mark: /40**

Please read the following sentences carefully, then choose the answer that is closest in the meaning to the underlined words.

1- He held the baby in his mighty hands.

a- harsh b- strong c- weak d- small

2- He wanted to savor his time with Paul and his grown children.

a- play b- eat c- save d- enjoy

3- There are no public phones in here but there is a phone booth in Market Street.

a- room b- operator c- switchboard d- kiosk

4- I scanned through the booklet but couldn't find the address.

a- searched quickly b- looked carefully c- read intensively d- gathered information

5- The 200-year-old jail is overcrowded, understaffed, and lacking basic amenities.

a- hot shower b- desirable features c- lovely people d- beds

6- The city is surrounded by beautifully tended gardens to attract the visitors.

a- cared for b- inclined c- well-arranged d- handled

7- The doctor has made an initial diagnosis, but there'll be an additional examination by a specialist.

a- recognized b- final c- primary d- instant

8- Having good manners is one of secrets to go directly to the heart of people.

a- handshaking b- behavior c- entertaining d- ways

9- You should always speak to customers politely.

a- slowly b- toughly c- carefully d- in respectable manner

10- A cascade **of** golden hair fell down his back.

a- large amount b- small amount c- considerable amount d- enough amount

11- Several suggestions have been offered for adoption by the panel.

a- competitors b- decision makers c- team players d- painters

12- The teacher was furious when he saw the students playing during the class.

a- calm b- happy c- cheerful d- angry

13- A celebrity is a person who is easily recognized by people in a certain region or country.

a- seen b- accepted c- welcomed d- identified

14- Don't make jokes on the phone as you may be misunderstood.

a- misguided b- well-interpreted c- misread d- mistaken

15- The city is approximately 10 kilometer from the capital.

a- usually b- hardly c- about d- carefully

16- We decided to go somewhere to eat the traditional dishes of this country.

a- sometimes b- restaurant c- some place d- somehow

17- We only had half an hour to see her before she was whisked off to some exotic location.

a- tedious b- dangerous c- expensive d- exciting

18- I'll put you through to the Sales Department.

a- transfer b- book an appointment c- do a favor d- communicate

19- It's important to understand how other cultures behave so you don't cause trouble.

a- disaster b- behavior c- problem d- offence

20- You look splendid in this outfit.

a- handsome b- casual c- unattractive d- younger

21- Street crossings are repainted gradually to make a spectacular view of the city.

a- usually b- immediately c- step-by-step d- intensively

22- The electricity of her house was cut off for safety reasons.

a- resupplied b- replaced c- disconnected d- readjusted

23- Pollution has reached disturbingly high levels in some urban areas.

a- uninhabited b- built-up c- mountainous d- rural

24- They go to the shopping centre just to window-shop.

a- sell goods b- buy goods c- haggle over goods d- watch goods

25- The control panel uses all the newest technology and is considered state-of-the-art.

a- very artistic b- very modern c- spectacular in view d- state manufactured

26- The food in this new restaurant is fantastic.

a- extremely good b- extremely bad c- little spicy d- well-cooked

27- A leaflet about the new bus services came through the door today.

a- document b- brochure c- printed book d- TV program

28- I've ordered a new two-piece suite for the living-room.

a- ward b- furniture c- instrumental composition d- liner

29- All the rooms have built-in cupboards.

a- easily removed b- permanently connected c- hard to connect d- separated

30- This aircraft incorporates several new safety features.

a- include b- enhance c- consolidate d- call for

31- The new findings suggest that women ought to monitor their cholesterol levels.

a- measure b- confirm c- check carefully d- maintain

32- We tailor any of our products **to** your company's specific needs.

a- prepare b- arrange c- improve d- increase

33- The conversation revolved around childcare problems.

a- discussed b- dealt with c- centered on d- solved

34- He draped his jacket over the back of the chair and sat down to eat.

a- removed b- dripped c- dropped d- put

35- I need to get busy and tone myself up.

a- be more exhausted b- be more fit c- have bad qualities d- indulge myself

36- The statue of the dictator was toppled over by the crowds.

a- graven image b- well-painted drawing c- banner d- poster

37- The stranger attended the concert in a sumptuous gown.

a- worn b- attractive c- shabby d- luxurious

38- I've skimmed through the paragraphs to understand the main idea of his passage.

a- read carefully b- read quickly c- double-read the passage d- read eagerly

39- I'm catering **for** twelve on Sunday, the whole family is coming.

a- serving b- waiting c- buying d- inviting

40- With so many areas of woodland being cut down, a lot of wildlife is losing its natural habitat.

a- shelter b- environment c- region d- belt